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Current Negotiations in the Bituminous Coal Industry

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THE BITUMINOUS coal industry has once again been subject to an interruption of production due to the unsuccessful outcome of collective bargaining negotiations extending over a period of some months. The vital place occupied by the industry in our interdependent economic system and the almost periodic suspensions of work in it justify some attention being paid to the nature of collective bargaining in the bituminous industry and an analysis of the recent negotiations between the operators and the miners over the terms of a new contract.

Economic Survey of the Bituminous Coal Industry

Granting the importance of examining this particular labor dispute, it would be well to have in mind the prominent contours of the economic backdrop against which this particular drama has been played. The first thing of note is that the number of producers is large and concentration of production control among them is relatively weak. In 1948 there were more than 5,000 coal companies in the United States producing over 1,000 tons a year each. The largest single coal company, the Pittsburgh Consolidation Coal Company, produced that year slightly less than 5 percent of the total output of coal.¹

¹ See Pittsburgh Consolidation Coal Company. *Annual Report*, 1948, p. 20.

The great number of coal companies and the lack of significant concentration of production among them can be explained by the wide dispersal and great volume of the nation's coal reserves and the relatively easy entry condition of the industry. The coal reserves are scattered over some 32 states and have been estimated at approximately 3,000 billion net tons.² Although more than half of that amount represents low-grade bituminous coal and lignite, we have something approaching a thousand years' coal supply, if present rates of coal consumption are projected.

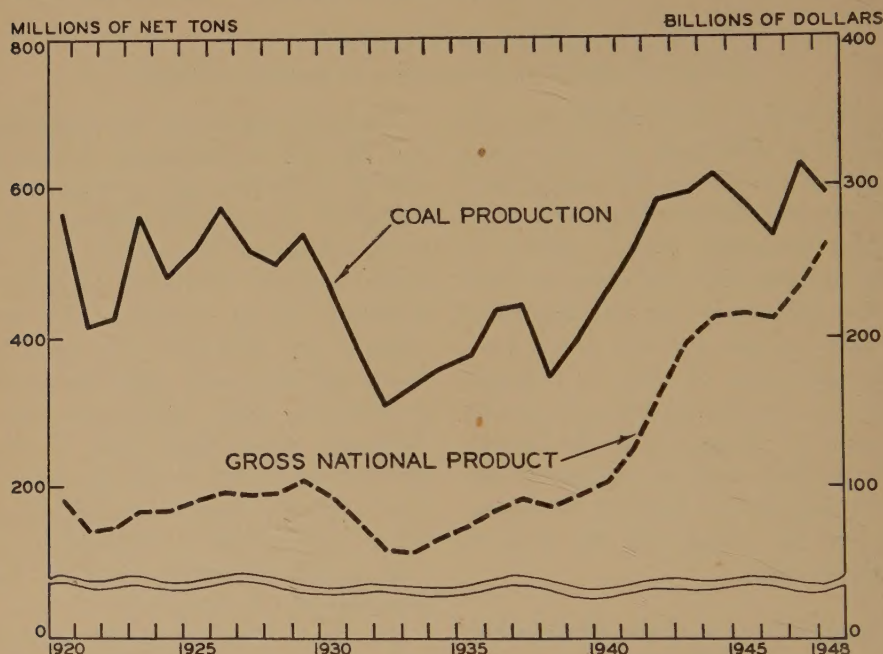
The ease of entry into the industry grows out of the vast extent of coal reserves and the small amount of capital needed to open a small mine. This relative freedom of entry finds its expression in the large number of mines in the industry. The actual number in any given year is significantly affected by the level of product demand for that year.

Not only is there great cyclical variability in the number of coal mines but ease of entry and exit is asymmetrical. Whereas four years, from 1928 to 1932, were required to reduce the number of mines from 6,450 to 5,427, only a one-year interval was needed to increase the number of mines from 7,333 in

² Report of the Energy Resources Committee to the National Resources Committee, *Energy Resources and National Policy*, January, 1939, p. 1.

CHART 1

COAL PRODUCTION AND GROSS NATIONAL PRODUCT, 1920-1948



Sources: U. S. Bureau of Mines; Kuznets, *National Product Since 1869*.

1946 to 8,700 in 1947.³ Although it is relatively easy to enter the coal mining industry with a small amount of capital, once the capital is invested the new mine will continue operation as long as more than out-of-pocket expenses are being met. Capital can be withdrawn only through the slow method of not reinvesting depreciation and depletion allowances.

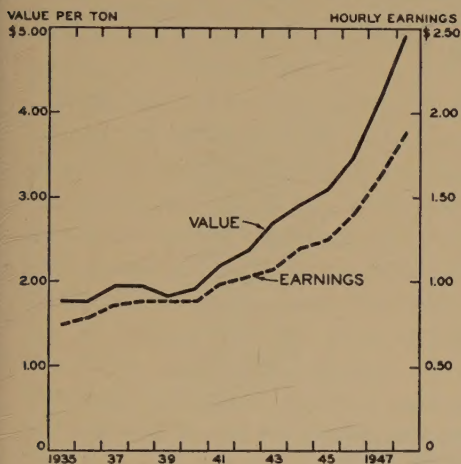
Demand for coal, on the other hand, is largely dependent on the level of national income. This is strikingly illustrated in Chart 1, in which bituminous coal production is compared with the gross national product.

This behavior of demand for coal, coupled with the sluggish response of mine production and the lack of concentration of production control, means that coal prices have been notably variable over the business cycle. Since miners' wages compose 60 percent of the tippable price of coal, the downward drift of coal prices from 1920 to 1934 meant concomitant pressure on those wages. The relation between coal prices and average hourly earnings is shown in Chart 2.

One result of the downward pressure on wages in the period from 1924 to 1933 was to bring the United Mine Workers to the brink of destruction. This nearly occurred because the union

³ Bureau of Mines, "Bituminous Coal and Lignite in 1947," *Mineral Industry Surveys*, 1948, p. 20.

CHART 2
COAL PRICES AND HOURLY
WAGES OF MINERS, 1935-1947



Source: U. S. Bureau of Mines.

was unwilling to accede to the operators' demands for downward wage revision. This inflexibility of the union, signified by the "No Backward Step" policy in this period, meant that the nonunion mines were underselling the union mines. The resulting unemployment led to mass desertions from the union and the spread of the nonunion sector of the industry from the South into many former union strongholds in the North.

This period of progressive deterioration lasted from the mid-twenties down to the inauguration of the NIRA Code in late 1933. This code and the later Guffey Coal Acts of 1936 and 1937 allowed both coal prices and wages to be increased and, at the same time that this price stabilization was being achieved, national income began to turn up. The result was more prosperity for both the operators and the miners. The correlation in direction of

change of profits or losses for the operators and average weekly earnings for the miners is shown in Table 1. Although the correlation in change of direction is not always positive for every year, it seems clear that periods of substantial losses for the operators have also been periods of low wages for the miners.

The financial improvement of the coal industry which developed gradually in the thirties and became spectacularly evident in the war and postwar periods was largely the result of the great increase in the demand for coal earlier symbolized by the upward movement of the national product graph. The resulting derived demand for labor meant that the coal miners too shared in the resulting prosperity by receiving much higher weekly earnings. Though the United Mine Workers was aggressive in pushing for wage increases throughout this period, its spectacular success could not have been attained save by grace of the continuing upward shift in the demand for coal.

Pattern of Recent Coal Bargaining

Already the important interrelationships between the economics of the industry and collective bargaining in the industry may be becoming somewhat apparent. The bargaining area in the coal industry has always been market-oriented. From 1898 to 1927 the central wage bargain for the industry was concluded by representatives of the miners (United Mine Workers officials) and representatives of the operators from the four-state area of Illinois, Indiana, Ohio, and western Pennsylvania. During much of this

TABLE 1
NET INCOME OF CORPORATIONS IN THE BITUMINOUS
COAL INDUSTRY COMPARED WITH AVERAGE WEEKLY
EARNINGS OF MINERS, 1935-1945

Year	Average Weekly Earnings	Net Income ^a
1935	\$19.58	\$(15,576,000)
1936	22.71	(12,402,000)
1937	23.84	(7,662,000)
1938	20.80	(30,522,000)
1939	23.88	(10,267,000)
1940	24.71	10,260,000
1941	30.86	38,304,000
1942	35.02	64,919,000
1943	41.62	94,063,000
1944	51.27	90,846,000
1945	52.25	78,025,000

SOURCE: National Coal Association, *Bituminous Coal Data 1935-1947*, (1948). Table constructed from data on pp. 92-93.

^a Figures in parenthesis represent net losses.

time, particularly in the earlier period, it was these states which produced most of the coal entering into common competitive markets. But when multi-employer bargaining was resumed in late 1933 the new area of bargaining was the Appalachian field, because of the rise of important southern coal producers who had successfully challenged northern operators in common markets. Pennsylvania, Michigan, Ohio, Maryland, West Virginia, Virginia, and parts of Tennessee and Kentucky were included in the Appalachian conferences.

Neither the earlier Central Competitive Field Conferences nor their successor Appalachian Field Conferences can be said to constitute industry-wide bargaining in the strict sense of having representatives of all the employers in the industry sit down with representatives of all the employees and of con-

cluding a mutually agreeable contract. Strictly speaking, the resulting contract was to apply only to the geographical area represented. But, in fact, the resulting agreement was used as the model for the outlying districts, i.e., those coal fields not represented at the Conferences. Both outlying districts and districts within the Appalachian area held conferences soon after the Appalachian Conference, at which representatives of the operators and the miners reached agreement on local matters, with the Appalachian Agreement as the general policy document to guide them in their deliberations.

From 1933 through the spring of 1941, half of the six contracts negotiated resulted in no suspension of mining. The other three contracts involved suspensions of two, four, and six weeks each. This can hardly be considered a high price on the part of

the miners for having their basic hourly earnings raised from 59 cents in 1933 to 99 cents in 1941. It is not difficult to understand how John L. Lewis developed his great popularity with his miners.

With the 1941 Appalachian Conference, the 40 cent a day differential of the thirties was eliminated between the North and the South, with ready agreement by the Northern operators and grudging concession on the part of the Southern operators. The resulting ill feeling on the part of the Southern operators against their Northern colleagues led to numerous attempts at separate bargaining sessions with the union up to and including the present negotiations.

Bargaining during the war and immediate postwar periods found the government intervening many times to postpone threatened strikes and to end actual ones, on the ground of the essential nature of continued production in the coal industry for national defense during the war, and for national prosperity in the period after hostilities. The year 1941 prior to the Pearl Harbor attack was the rockiest, in the sense of the number of days lost, in the entire period from 1933 to 1948 inclusive. Some fifty days were lost by various segments of the soft coal industry in that year. Of the war years, 1943 was the worst in terms of suspensions in that four short suspensions of less than a week each occurred that year. No days were lost through strikes in either 1942 or 1944 and only three days in 1945.

The fact that more days were not lost was not due either to the moderation of the miners' demands, on the one

hand, or to the easy amiability of operators' concessions, on the other. The answer is to be found rather in the almost constant intervention of the government, which ran all the way from Presidential fireside chats and the "good offices" of Presidential Assistant, John R. Steelman, to referral of pending disputes to the National Mediation Board and the War Labor Board, and finally to seizure of the mines in 1943 and 1946 by the Secretary of the Interior, acting under Presidential directive. In both these government seizures agreements were concluded between the United Mine Workers and the Federal government.

These war years found average hourly earnings of miners increasing from 99.3 cents in 1941 to \$1.24 in 1945. This significant increase in earnings occurred in spite of the government wage stabilization policy represented in the "Little Steel Formula," because of considerable amounts of overtime pay and later inclusion in contracts of "portal to portal" provisions so that the miners could receive payment for traveling time in the mines.

Establishment of the Health and Welfare Fund

The most significant development of the postwar years has been the hectic bargaining centering around the Health and Welfare Fund. The fact that issues pertaining to this fund were prominent in the recent strike entitles its development to some review. The idea of such a fund, to be financed by a royalty on each ton of coal produced, was first presented full-blown to the operators in the First National Wage

Conference in 1945. The rationale which the miners offered for such a demand is given in the following statement:

Such royalty shall be deemed partial compensation in equity to the mine worker for the establishment and maintenance of his ready-to-serve status, so vital to the profit motive of the employer and so imperatively essential to public welfare.⁴

Nothing came of the demand at that time, however, since it was jettisoned as part of a compromise leading to higher wages. The next year found the union advancing the proposal once again, with much more insistence this time. In the course of a strike in April, 1946, the Northern operators, after conferences at the White House, appeared ready to accept such a fund, but the Southern operators were adamant in opposing what they regarded as a "new social theory." Once again the Secretary of the Interior, then "Cap" Krug, was authorized to seize the mines for the government and once again, as in 1943, an agreement was concluded between the government and the United Mine Workers.

This agreement, in addition to providing for an increase of \$1.85 a day in base pay, established a Health and Welfare Fund to provide payments to miners for wage losses resulting from sickness, permanent disability, or retirement. The Fund was to be financed by a five-cent royalty on every ton of coal produced and was to be administered by trustees appointed by the two contracting parties. The Health and Welfare Fund set up by the Krug-Lewis agreement of May 29, 1946, was

not formally accepted by the operators until over a year later when Northern operators signed with the union on July 7, 1947, and were followed by all the Southern operators by July 11. The royalty payment was upped from five to ten cents a ton, and there was a further increase of \$1.10 in daily wages for the miners.

In the meantime Lewis was not content to wait until he could reach an agreement with the coal operators, but insisted on trying to reopen the government contract in October, 1946, in order to secure increased benefits for his miners. Secretary Krug, however, contended that it was not permissible to open the contract during the period of government operation. When Lewis announced termination of the contract, the government proceeded to secure an injunction in the Federal District Court, presided over by Justice T. Alan Goldsborough, on November 18, 1946.

Refusal to obey the terms of the injunction, as evidenced by the walkout of miners at midnight on November 20, resulted in the instigation of a civil contempt proceeding in the same court in which the injunction had been secured. The result of this proceeding was that Justice Goldsborough on December 4 levied fines of \$3,500,000 against the United Mine Workers and \$10,000 against Lewis personally. This heavy fine and the possibility of even greater fines led Lewis to issue an order ending the strike on December 7, 1946. The fine against the union was later reduced to \$700,000 by the Supreme Court on March 6, 1947.

Although the 1947 contract, signed by the operators and miners to run to

⁴ *United Mine Workers Journal*, March 15, 1945, p. 5.

June 30, 1948, contained provisions for the establishment of a Health and Welfare Fund, the actual initiation of payments from this fund was a matter of great dispute among the trustees appointed. The original trustees under the 1947 contract were John L. Lewis for the miners, Ezra Van Horn for the operators, and Thomas Murray as a neutral trustee. The disagreement among these trustees centered around the questions of age of eligibility of the miners for pensions and the amount of such pensions. Matters reached a climax when Mr. Murray resigned on January 16, 1948, and a strike of some 400,000 bituminous coal miners occurred on March 16. The latter suspension occurred after Lewis publicly accused the operators of dishonoring the 1947 Wage Agreement.

To cope with this new nation-wide stoppage of coal production, President Truman issued orders that the Justice Department should secure a temporary restraining order, under the "emergency" provisions of the Taft-Hartley Act, on Lewis and the United Mine Workers. Refusal of the mine leader to issue an order stopping the strike resulted in another fine by Justice Goldsborough, on April 20, of \$1,400,000 on the United Mine Workers of America and \$20,000 on John L. Lewis. The dispute was actually settled before the levy of the fines when the Speaker of the House, Joseph W. Martin, Jr., intervened in the dispute on April 10 by way of suggesting Senator Styles Bridges (R-N.H.) to serve as the third neutral trustee. On April 12 Senator Bridges suggested a compromise in which most of the Lewis demands were

embodied. This "compromise" provided that the miners should be eligible to retire at the age of 62 and should receive \$100 a month at that time.

The 1948 Wage Agreement merely consisted of several simple amendments to the basic 1947 agreement. These amendments provided for a \$1.00 per day wage increase across the board, and a 10 cent increase in the royalty per ton to be paid into the Health and Welfare Fund. This agreement was to terminate on June 30, 1949.

Bargaining in the Current Negotiations

The first move in the current negotiations was made by the operators, when the Southern Coal Producers' Association sent a notice of termination of the 1948 contract to the United Mine Workers on April 21. This step resulted in the beginning of talks between the Southern operators and the union in Bluefield, West Virginia, on May 25. The union then suggested and received the acquiescence of the United States Steel "captive mine" companies for separate bargaining sessions. These talks began on June 13 in Philadelphia and were shifted to White Sulphur Springs, West Virginia, on June 23. After termination of the 1948 contract with the other bituminous operators on June 14 by the union, meetings between these Northern and Western commercial operators and the union began on June 22, also in White Sulphur Springs. This conference was designated the "National Conference."

This meant that from the very beginning of negotiations for a new contract the operators' bargaining front was split into three divisions. This, obvi-

ously, was a development in favor of the union, particularly since past agreement with any considerable segment of the industry has always resulted in the rest of the bituminous industry having to fall in line. That is to say, the rest of the industry would rather sign a new agreement, even on unfavorable terms, than face the certain loss of markets to those operators who had signed.

The next move occurred when Lewis suggested to the Northern mine operators and the "captive mine" operators that a policy of production restriction in order to cut down large coal stocks be announced by the operators, or by the operators and the union jointly. The premature mid-June leakage to the press of a plan to have Harry Moses, president of the coal-producing subsidiaries of U. S. Steel, resign his present position to become permanent negotiator for the Northern operators, at \$75,000 a year, met with unfavorable public reaction. Fear was expressed in Congress and elsewhere that creation of this new position might carry with it cooperation between the operators and the union for "permanent stabilization" of the bituminous industry at the expense of the public. Immediate fears of antitrust action forced the operators to deny any such intentions publicly and thus to reject the union proposal. The result of this state of affairs was that the United Mine Workers undertook to "stabilize" the industry single-handedly by means of the inauguration of the three-day work week after the contract expiration date of June 30.

By this time certain issues were

shaping up in the bargaining sessions. After the customary presentation of general demands the union unfolded its more specific requests. The miners' representatives demanded:

1. Increase in the basic daily wage from \$14.05 to \$15.00.
2. Reduction of the 8-hour day to 7 hours without diminution of pay.
3. Increase in the royalty payment for the Welfare Fund from 20 cents to 40 cents per ton.
4. Improvement of safety measures in the pits.
5. Equalization and stabilization of employment by some kind of centralized production control.

The operators on their part asked for:

1. Elimination of the clause in the contract providing that miners should work when able and willing.
2. A return to the old policy of levying fines of \$1 to \$2 per day per man for unauthorized strikes.
3. Restriction of the operations of the union's Health and Welfare Fund so that the payments from the fund should be limited to death and survivors' benefits, and hospital and medical insurance.
4. No increase in labor cost over the 1948 contract.

Later in the sessions, while the Southern operators continued to insist on their earlier revisionary demands, the Northern operators at White Sulphur Springs let it be known that they were willing to extend the existing coal

contract for another two years. They were, however, adamant in rejecting any proposals from the union which would have the effect of increasing labor cost. The chief Northern spokesman, Mr. George Love, President of the Pittsburgh Consolidation Coal Company, went so far as to charge that the union's demands for increased benefits were the expression of a purely tactical political move designed to put the United Mine Workers in a more powerful light as compared with other unions. Mr. Love stated:

As that affects the United Mine Workers, we think their whole purpose is to achieve an increase in wages and shorten hours to prove they are more powerful than other unions rather than to benefit this industry and the employees.⁵

The union had earlier attributed similar ulterior motives to the operators' refusal to grant the desired increased benefits. Even willingness of the miners to scale down their original demands somewhat met no favorable response from the operators. The union bargainers suggested by implication that settlement of the dispute might have been secured save for the control which was exerted over the operator negotiators by steel companies. Lewis had declared on September 22:

Obviously—and we have so told the operators' negotiating committee—they are not free agents. They are completely under the influence of the agencies that control steel. Love is the agent of Steelmaster George Humphrey. Obviously Humphrey would not permit his agent, Love, to come to any agreement on any issue that would prejudice the controversy in steel.⁶

Whatever the exact merits of these contrary charges, it is plain that external influences were not absent from the minds of the negotiators in the coal controversy.

Union Restriction of Coal Production

The second major issue of contention between the two parties, that of sharing work and maintaining coal prices through some kind of centralized control of production, was considered of great importance by the union. The reason for this great concern of the union with the amount of production arises from its obsession with maintaining the existing wage structure of the industry and with developing some equitable plan of work-sharing among the members of the union in the face of declining coal demand. This concern of the union with coal prices has been a long-time preoccupation, as is evidenced by its earlier support of the NIRA and Guffey Coal Act minimum price fixing.

Thus, the inauguration of the three-day work week must be viewed as a strategic maneuver on the part of the union to secure a long-term interest, rather than simply as a tactical maneuver in order to secure a more favorable contract out of the current negotiations. The long-range implications of this policy are emphasized by the fact that it was laid down, not in the heat of battle, but at the October, 1948, convention of the United Mine Workers. At this convention President Lewis had these pregnant words to say:

But already there are signs of diminishing demand in the Anthracite as well as the Bituminous regions, and there are

⁵ *The New York Times*, October 20, 1949.

⁶ *United Mine Workers Journal*, October 1, 1949.

signs that competition will again be apparent in that industry, cutting prices, which in turn will induce them to ask for a lower wage scale. . . . When this market condition comes to a point in the Bituminous industry that it threatens the stability of our contract and the working conditions of our people, when the disparity of employment gets to a point where it constitutes a rank injustice and lack of opportunity for our members to work, the United Mine Workers of America itself may find it necessary to advise our members how many days a week they need to work. We have that contractual right, because the contracts are written to permit that. It is a matter of self preservation for our mine workers; it is a matter of self preservation for the investors in the industry.⁷

Before the three-day-week policy was actually put into effect by the union, two short periods of suspension of coal production were ordered by it for the purpose of reducing the excessive accumulation of coal stocks which overhung the market and thereby threatened the existing price-wage structure. The first suspension of mining under this policy was from March 14 to March 28, 1949. The ostensible reason given for the suspension was that it was a memorial period for miners killed and injured in 1948. The actual objective, of course, was the reduction of the coal stock pile of some 70,000,000 tons, which was the highest since 1942.

The next period of suspension was from June 13 to June 20, 1949. In announcing this suspension Lewis said:

The magnificent production efforts of mine workers during the current year have created menacing instability in the mining industry. Results are apparent in more than

adequate tonnage for the domestic and export market; irregular and broken working time affecting some hundreds of thousands of men, while other miners work steadily; economic inequities affecting the mine workers; and a general condition of instability throughout the whole industry. . . . Exercising, therefore, its contractual options under the agreements in all Anthracite and Bituminous Districts, the United Mine Workers of America is hereby authorizing a brief Stabilizing Period of Inaction, during which a cessation of all mining will occur.⁸

When the negotiations between the miners and operators did not eventuate in a new contract before the June 30¹ expiration date of the old contract, the old policy of "no contract, no work" was replaced by the union's newly enunciated three-day work week. Under this policy all mines east of the Mississippi River were to work Monday, Tuesday, and Wednesday until further notice was given. In order to find the explanation for this new policy at this time one need only refer to the foregoing analysis and to the added point that the union now has a much greater stake in the continued production of coal than it ever had in the past. This added stake in continued production is represented by the Health and Welfare Fund, which depends for its very existence on funds derived from a royalty on each ton of coal produced. It is obvious that when no coal is being produced no royalties are forthcoming. It was, therefore, the fond expectation of the union leaders that they would be able to continue to receive such royalties as would come from three-day-a-week production, while the new coal

⁷ Proceedings of the Fortieth Consecutive Convention of United Mine Workers of America, Oct. 5-12, 1948, Cincinnati, Ohio, p. 297.

⁸ Letter of June 8, 1949, from Officers of United Mine Workers to all officers and members of the United Mine Workers.

contract was being negotiated. As will be shown later, their disappointment in this expectation led directly to the strike.

Immediately after the enunciation of this union policy, questions as to its legality were raised. Such questions came, as one would expect, from the side of the operators, but they were also raised elsewhere in editorial comment and even in the halls of Congress. Senator Robertson (D-Va.) stated, "I can't believe that Congress, in exempting unions from the antitrust laws, ever intended to confer on any union the right to control production and therefore to control prices." Senator Robertson then proceeded to instigate an investigation of the consequences of the three-day week through hearings before the Senate Committee on Banking and Currency. But even more serious deterrents to the success of the union policy than this investigation developed.

These may be summarized briefly as a continued fall in industrial activity, which was reflected in a fall in demand of industrial consumers for coal, continued improvements in efficiency in the utilization of coal, and a continued tendency to shift to competitive fuels, aided by a sharp fall in the price of crude oil. These various factors, particularly the decline in industrial activity, are reflected in the fact that although stocks of bituminous coal declined 6.8 percent from June to July the days' supply of such coal for the same period increased from 68 days to 72 days. By the end of the second month of this output-restriction policy, stocks had further declined only .7 of

1 percent, although the days' supply had declined from 72 days to 63 days by September 1. This latter decrease of 12½ percent can be largely attributed to the increase in industrial activity in August. The actual decline in coal stocks for the first two months was from 74,161,000 tons to 68,621,000. This still left coal stocks greater than they had been since 1942.

If further evidence is needed of the failure of this policy, it can be found in Lewis's own words. In a press conference on September 22, after the "three-day" work week had been abandoned for a "no-day" work week, he accused the operators of securing both public and miners' support against the three-day work week. He stated, "They get much public support in their opposition to the three-day work week and apparently have convinced the individual mine workers throughout the entire industry that the continuance of the three-day week was not constructive."⁹

The Question of Higher Royalty Payments

Turning to the third main issue of the current negotiations, we find that the union regards an increase in the royalty payments as imperative to the continued operation of the fund. In testimony before the Senate Banking and Currency Committee on August 1, 1949, Miss Josephine Roche, Director of the Fund, presented recent monthly figures of collections and benefits, which made it apparent that the fund could not go on operating with

⁹ *United Mine Workers Journal*, October 1, 1949.

its current scope unless the royalty payments were increased. Miss Roche revealed that for the first six months of 1949 total benefits were \$61,344,773, whereas total tonnage collections for this same six-month period were only \$44,753,248. Thus income was \$16,591,425 less than outgo. The problem of the continued monthly deficit became even greater with the inauguration of the three-day work week, because of the smaller coal tonnage being produced on which royalty payments would be made.

The acuteness of this problem is pointed out by the fact that the treasury of the Health and Welfare Fund declined from \$30,000,000 on June 30 to \$14,000,000 on August 30. Thus it was that the fund trustees needed only the pretext of the suspension of the royalty payments by some Southern operators in order to cease all payments from the fund. The suspension of payments from the fund by the trustees after September 17, 1949, led directly to the suspension of coal mining on September 19, since the failure of the operators to make their contractual royalty payments was blamed for the cessation of payments from the fund.

Government Intervention

As the coal strike passed its sixth week at the end of October, rapidly dwindling coal stocks led to curtailment of railroad service by 25 percent and to spreading industrial slowdowns. Absolute exhaustion of coal reserves was not needed for a firm to curtail some of its operations, since most concerns which used coal preferred to operate on a part-time basis for a

longer period rather than face the necessity of possibly having to stop production completely. This growing need for more coal, coupled with a complete stalemate between the bituminous operators and the union, led to increasing pressure for White House intervention. Earlier attempts at mediation begun on October 7 by Cyrus Ching, head of the Federal Mediation Service, had ended in failure.

In order to forestall almost certain intervention by the government under the emergency provisions of the Taft-Hartley Act, John L. Lewis ordered the miners back to work on November 9, after 52 days of work suspension. The return to work was to be only until December 1, when the miners were scheduled to leave the pits again. When that date came the miners walked out but were almost immediately ordered by Lewis to return to work on a three-day basis once more. The tactic now was to sign individual operators with the inducement that signature operators could immediately produce full time, thus gaining a competitive advantage over the holdouts still on the three-day work week. On December 6 the first operator defection occurred, when a number of small pits signed a new contract calling for an increase in welfare royalties of 15 cents and an advance of 95 cents a day in the basic daily wage.

Economic Consequences

There are certain important economic implications of the current coal negotiations which should be carefully examined. At the time of this writing the new coal contract for the entire

industry had not yet been agreed upon, but it seemed likely that increases in the royalty payments from 20 to 35 cents a ton and some small hourly wage increases were quite possible. If this in fact occurs, then certain results will follow therefrom.

The first point to be noted is that the economic effects of higher royalty payments and higher wage payments are very different. Higher wages provide a greater incentive to mechanization than do higher royalty payments. This conclusion follows from the fact that the higher labor cost in the form of wage increases can be offset to some extent by substituting capital for labor in the mines and thus reducing labor costs. Royalty payments, on the other hand, are in the nature of an excise tax the burden of which cannot be overcome by mechanization. It is true that increases in the competitive position of coal through managerial efficiencies, improved mechanization, and the like can still take place, but there is no way for the operators to escape the burden of the tax save through price increases. In the face of declining demand for coal, such price increases are not very likely; hence the operators may have to bear all or the greater part of such royalty increases.

To the extent that the operators bear all or most of the burden of such higher "taxes" and higher wages, profits for internal financing of further mechanization are reduced. Furthermore, it is quite probable that many marginal operators will find their profits negative and will be eventually forced out of the industry. A decrease in the number of employers in the coal industry, when

all such employers are faced with soft markets, means that the displaced miners will not be able to find new employment in other coal mines. Hence, increased labor costs are likely to have unfavorable employment effects in the fairly near future.

One other important consequence follows from the current coal negotiations. This is that more, rather than less, government influence may be expected to be brought to bear on the coal industry in the next several years. The greater role of government will largely be due to the failure of the operators or the union to develop a successful program for bringing about price stabilization in the bituminous industry rather than result from government intervention in the coal dispute, since the latter has been a regular occurrence for many years past.

Suggestions in recent months that the operators would participate in such an internal industry plan were quickly squelched as a result of public and Congressional opposition. The miners' plan of price stabilization and work-sharing through the three-day week proved to be of minor importance in reducing the huge stockpiles, and this plan also met with considerable opposition both from within and from without the union. The result is that continuation of market pressure for lower coal prices, growing unemployment, and increasing numbers of operator bankruptcies will find the United Mine Workers and at least some of the operators turning to Congress for legislation for some kind of price- and output-stabilizing policies to be carried out under government auspices.

"Fringe Benefits" and Collective Bargaining

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THE NEWS from the labor-management bargaining tables in 1949 has been dominated by union demands for new or improved health, welfare, and retirement plans. The emphasis on these and other so-called "fringe benefits" has been most frequently interpreted as a union move to salvage some economic gains for union members when a fourth round of general wage increases seemed foredoomed to failure. Employers, on the other hand, have been pictured as holding the line on wages and yielding as little as possible on the collective bargaining "fringe."

To give a few examples: the United Auto Workers (CIO) agreed to a company-paid pension plan and no wage increase at Ford, and the United Steel-Workers (CIO) accepted the President's Fact Finding Board recommendations that there should be no wage increase but that a ten cent an hour package of pension and insurance contributions by the steel companies was warranted. On the other side, the United States Steel Company and most of the other steel companies seemed willing to undergo a strike rather than accept the fact finding recommendations.

Most of the news stories and commentaries, however, have given only a superficial view of the meaning of these events. Are union drives for greater security, against loss of income due to sickness, disability, and old age, merely substitutes for higher wage rates when bargaining power and the economic

situation prevent such wage increases? Do employers look upon employees' benefits only as concessions to labor's bargaining strength? Or, do both union leaders and employers see in benefit plans, however different their views as to the size of the benefits and the methods of financing, certain advantages of importance to all concerned?

Perhaps the smoke engendered in bargaining negotiations has obscured the real nature of the growth of supplementary wage practices and employee benefit plans. Although union pressure has played a vital role in the development, profit-minded employers, including those in the steel industry, have increasingly favored paid vacations and holidays, old age pensions, and health and welfare benefits for their workers, quite apart from the collective bargaining issue. Their reasons, as will be seen later, are essentially practical.

To be sure, many employers still object strenuously to these benefits being considered proper subjects for bargaining negotiations. They believe that management alone has the responsibility to decide what plans are practicable and when they can be installed. However, the significance may lie not so much in the loss of management prerogatives as in the gradual recognition of mutuality of interests.

From Fringe to Fabric

Benefit plans and supplementary wage practices can no longer be accurately described as "fringe" items of

collective bargaining; they have become as essential to the main fabric of bargaining as wage rates, hours of work, and working conditions. How this came about will be analyzed in later paragraphs, but, first, what has been the trend? Although statistics as to the extent and coverage of various plans included in collective bargaining are not completely accurate or up to date, and although knowledge of the adequacy of the plans in terms of the economic welfare of the workers is even less certain, enough information is available to provide a general survey of the development.

The United States Bureau of Labor Statistics has estimated that by the middle of 1948 over three million workers were covered by some type of health, welfare, and/or retirement benefit plans under collective bargaining agreements. The number of workers covered was double the figure for early 1947.¹ By the end of 1949, there will undoubtedly be considerably more than four million union members covered by such plans.

Provisions for paid vacations and pay for holidays not worked are found in more union agreements than are health and welfare plans. In 1940, according to the BLS, only about 25 percent of all workers under collective contracts were covered by paid vacation clauses. The most common provisions were for one week after one year of service, and two weeks after five years. By the end of 1944, however,

the proportion had risen to 85 percent. The percentage has probably not increased substantially since 1944, however, because in some unionized industries, as the building trades, paid vacations are not as a rule feasible for many of the workers. As for holidays, in a study of contracts in effect in 1948 and 1949, the Bureau of Labor Statistics found holidays-with-pay clauses in over two-thirds of the agreements. In the majority of the agreements, six paid holidays were provided.

The bargaining issue over holidays and vacations in the majority of negotiations today, therefore, is not whether such time off should be granted with pay. Instead, the negotiators are concerned with the length of vacations, the number of holidays, and the eligibility requirements. On the other hand, the initiation of pension funds and health and welfare plans is still very much a part of the bargaining scene, with the greatest public interest in 1949 centering on the pension.

Although "retirement benefits" might be a more accurate term, the word "pension" has come to mean in industrial circles any periodic payment to a retired employee, usually for life.² Pension plans may be classified in several ways. They may be insured or "self-insured," contributory or noncontributory, and established by the employer, by a union, or jointly through collective bargaining.

¹ The agreements studied included benefit plans established through bargaining, as well as plans established by employers and later included in contracts.

² Technically, any part of the payment resulting from an employee's contribution is not a pension, but for simplicity the entire payment, however financed, is called a pension payment.

Smaller companies commonly fund plans with insurance companies, either with individual policies for each eligible worker or with group annuities. Large companies are more apt to establish self-funded plans, administered by trustees. The cost of pension plans may be met entirely by company payments or by joint contributions of employers and employees. The Steel Fact Finding Board quoted studies of the Bureau of Internal Revenue and the Bankers Trust Company that indicated a trend toward noncontributory pensions. U. S. Steel, on the other hand, quoted a National Industrial Conference Board study that reported a trend toward plans with employee contributions.

The trend toward collective bargaining determination of pension plans, however, has not been in dispute since the National Labor Relations Board ruling of April 12, 1948 (*Matter of Inland Steel Company*, (1948) 77 NLRB No. 1) that pension plans are bargainable. The term "wages," as used in Section 9(a) of the Taft-Hartley Act, according to the NLRB, "must be construed to include emoluments of value, like pension and insurance benefits, which may accrue to the employees out of their employment relationship." When the Supreme Court refused to review the case in April, 1949, it became clear that pension plans set up separately by either employers or unions would become the exception rather than the rule.

Although the number of pension plans has been growing rapidly and the benefits themselves have become larger

in amount,³ pension plans have until now formed a small proportion of benefit plans in operation under collective bargaining. A Bureau of Labor Statistics study in 1945-1946, for example, showed that in the more than fifteen thousand manufacturing plants surveyed almost 50 percent had some benefit plans for plant workers, but only 5 percent had pension programs. Thirty-seven percent had life insurance protection for wage earners, 30 percent had some form of health insurance, and 12 percent had other types of insurance coverage. Private surveys of union contracts have shown similar percentages. The more common benefit plans, ranged in descending order according to the number of workers covered, are life insurance, prepaid hospitalization, organized cash sickness benefits, prepaid surgery, pension plans, sick leave with pay, and prepaid medical care (nonsurgical medical attention).

This brief review has not included all types of supplementary wage practices and employee benefit plans. Some have not been important in collective bargaining, remaining largely under management option, such as Christmas and other nonproduction bonuses and profit-sharing bonuses. Others are in-

³ Bureau of Internal Revenue records show that employers with pension plans paid 3.94 percent of their payroll in 1929, or \$89.06 per participant, and 7.22 percent of payroll in 1946, or \$198.51 per participant. The *Survey of Current Business*, July, 1949, shows employer contributions to private pension and welfare funds as \$128 million in 1929 and \$1,103 million in 1948, an almost ninefold increase.

volved in collective bargaining, but still on the "fringe," such as severance pay, call-in and report-in pay, pay for make-ready and clean-up time, pay for time involved in grievance procedures, and maternity benefits. Enough has been covered, however, to indicate that important changes have been taking place in the character of the typical worker's income from his employment.

Not so many years ago a wage earner was paid solely according to the number of hours worked or the number of pieces produced. The income derived from his employment was entirely and directly related to production. Premiums above the basic wage, if any, were for work during additional hours or for work above the established standards.

Today, however, the average wage earner, particularly the organized worker, may receive pay while on vacation, on a number of national and local holidays, when he is sick, or when he is called in or reports to work and no work is available. In addition, he may receive cash benefits to pay hospital and doctors' bills and when he retires.

He may contribute out of his earnings to pension and insurance plans, but for the most part payments are made directly by his employer and not deducted from his wage. One estimate, made by the Chamber of Commerce of the United States, was that the typical American worker during 1947 received more than \$424 in benefits over and above his wages, an average of twenty and one-half cents an hour. The average company in this sample survey paid almost 5 percent of its wage bill for

time not worked (vacations, holidays, and so forth) and another 4.5 percent in contributions to pension plans and health and welfare funds. The estimate included also 3.2 percent of payroll in legally required payments (Old Age and Survivors' Insurance, Unemployment Insurance, and Workmen's Compensation). The sample used may not have been representative of all industry, but it provides further illustration of the extent to which attempts are being made to alleviate economic insecurity in industrial employment.

The Role of Collective Bargaining

At one time most unions were suspicious of pensions and other benefit plans paid for by employers and even openly hostile to their introduction. To unions, uncertain of their strength, they were paternalistic plans designed to hold down wages and to prevent strikes or the spread of unionization. Many unions set up their own programs of benefits and insurance for their membership, often at grave financial risk, rather than ask employers to support or to contribute to the cost.

After the passage of the Wagner Act, the situation gradually changed. The fear of company unions was removed; company-paid benefit plans did not prove to be a hindrance to strikes; if they held down wages, the restraint appeared to be merely temporary; and, finally, plans established through collective bargaining would protect union membership if benefits were dependent upon membership.

As more and more union leaders have realized that collective bargaining

could be used to lessen the dangers of insecurity facing union members and their families, union pressure for such protection has increased. This pressure has brought substantial benefits to union members and to many unorganized workers as well. In many cases, undoubtedly, employers have provided benefit plans to forestall union demands or to resist attempts at organization.

Union pressure through collective bargaining has received some notable assistance in the growth of benefit plans, however. The government, particularly the Federal government, has played and is playing an important part. In 1935, the Wagner Act made it mandatory for employers to bargain with representatives of their workers. National Labor Relations Board rulings have, since then, slowly extended the legal area of bargaining by liberalizing the definitions of wages, hours, and working conditions.

During World War II, under wage stabilization, the War Labor Board permitted the adoption or improvement of "reasonable" insurance, pension, vacation, holiday, and other plans, when jointly requested by labor and management. Joint requests were frequent because employers as well as unions were anxious to increase the total pay of workers. Employers were under pressure to raise output, which they could do only by attracting more persons into the labor market and by increasing productivity. Unions were under pressure as the cost of living increased. The War Labor Board, required by law to sta-

bilize wage levels, used the "fringe benefits" as a safety-valve for release of these pressures and to encourage national output.⁴

In addition, the Internal Revenue Code has for some years encouraged insurance and pension plans by considering employer contributions to legitimate, nondiscriminatory employee insurance programs as deductible business expenses for tax purposes. The stage, therefore, was completely set for a rapid increase in pension and insurance programs when the National Labor Relations Board in two 1948 rulings (Inland Steel and W. W. Cross Co. cases) made it plain that the adoption, cessation, or changing of a benefit plan is a bargainable issue. If a union requests a plan, the employer must bargain in good faith. Also, if there is no union in a plant, but organizing activities are under way, the adoption of a benefit plan by the employer or a substantial change might mean a charge of coercion against that employer.

The government, then, has done much to make possible the growth of benefit plans under collective bargaining,⁵ but so has management. However much many employers dislike and resist the extension of collective bargaining to include benefit plans, few of them are opposed to the idea of bene-

⁴ The Board also in disputed cases ordered companies to include in the union contract any benefit plans established previously by the companies. The policy was that, because of the ceiling on wages, any change in longstanding conditions of employment was a matter for joint labor-management determination even though it concerned benefit plans established unilaterally by the employer.

fits. Some of the factors that have motivated employers to adopt benefit plans, irrespective of unionization, have been:

1. A social obligation to reduce the economic hazards facing employees and their families.
2. Savings resulting from reduced labor turnover.
3. Higher worker efficiency when the employees enjoy greater security.
4. Attraction of better and more stable workers.
5. Preference for private insurance, particularly in the health field, as opposed to governmental insurance.
6. Tax benefits on employer contributions to insurance and pension programs.
7. For pensions, the economies in operation when older employees can be retired and replaced with younger, lower-paid workers.
8. For vacations and holidays, the improvement of morale and productive efficiency through the reduction of fatigue.

The Search for Security

We have seen that "fringe benefits" have assumed a growing importance in

⁵ The Health and Welfare program of the United Mine Workers, for example, was established in May, 1946, as a result of government seizure of the mines under the War Labor Disputes Act and an agreement between the Secretary of the Interior and John L. Lewis. In the fall of 1949, the report of the Steel Fact Finding Board was apparently setting a pattern for current insurance and pension plan negotiations.

American industry and at the collective bargaining table. If it is true that the very noticeable trend is more than a wartime phenomenon and a substitute for a fourth round of postwar wage increases, what then has been the underlying cause?

Most observers would probably agree that the most significant motivation is not the desire of union leaders to find new ways to serve their followers, nor is it the desire of employers to improve their working forces, although these are important. The chief cause appears to be the still-growing search for economic security on the part of the American workingman. In earlier years, this search resulted in hard-won legislation for workmen's compensation, unemployment compensation, and old age and survivors' insurance. More recently, labor and management have attempted to supplement government protection with more generous benefits and to provide protection in areas of economic emergency not touched by governmental programs.

The trend in private programs has now reached a point that calls for an evaluation of the social and economic consequences. What is the meaning of the trend for workers, for unions, for management, for the economy and consumers, and for our society? A detailed evaluation is not attempted here, but some tentative answers are suggested.

For the wage earner, who is the beneficiary of a comprehensive health and welfare program and who receives a pension on retirement to supplement social security benefits, the advantages

in health, happiness, and a sense of security are undeniably great. An important question is, however, whether private plans will be able to bring adequate protection to all wage earners.

Even in companies and industries capable of supporting such programs, not all workers would be covered. Employees who do not meet the length-of-service requirements, common to almost all benefit plans, are without protection. In most cases, also, workers who change employers lose any rights and benefits they have accumulated; and this limits the opportunities of workers for changing jobs, even though they may be better qualified for other employment.

For unions, the opportunity to bargain on any subject that affects the economic welfare of workers means greater control over membership and a strengthening of the collective bargaining relationship. However, unions vary greatly in bargaining strength and in the ability to bring about protection for their members against economic emergencies. And even a strong union cannot establish an adequate program where a company is financially weak without reducing the number of jobs or even forcing the company out of business.

For management, the increase in benefit plans and supplementary wage practices brings a host of problems. Plans negotiated under collective bargaining add further rigidity to labor costs because of the difficulty of dropping them, once started. Many employers feel that comprehensive plans

raise the "break-even" point of production to dangerous heights, increasing the hazard of business failures. Employers worry particularly about the cost of pension plans because of the difficulty of evaluating their ability to absorb continuing obligations over a long period of years. In addition, when a pension plan is installed, there is an existing "accrued liability" in that contributions for older workers cannot be made over a period of years before these workers reach retirement age.

Another problem related to pension plans is whether it is sound practice to require all employees to retire at the age of sixty-five. At the present time, about three million workers of sixty-five and over are gainfully employed. Removing them from the labor force would substantially reduce the national income. Philip Murray, President of the CIO, has proposed that workers should not be arbitrarily dismissed at sixty-five but should have the right to decide whether to retire and accept pension benefits or to continue working. However, many employers wish to retain the right to retire employees who, in their judgment, are no longer capable of meeting production standards.

Economic Questions Raised by Benefit Plans

For the economy, one question to be answered is: Who really bears the cost of the expanding "fringe benefits"? In some cases, as in the coal industry, it has been possible to transfer most of the cost to consumers through higher

prices.⁶ In general, however, the incidence of the cost cannot be so simply determined. To some extent the cost may be borne by the workers directly involved by means of smaller or less frequent wage increases. The employer may pay for part of the cost out of profits. However, the remainder of the cost is not necessarily passed on to consumers. To the extent that the benefit plans increase productivity, through better health and morale, greater security, and the replacement of less efficient older workers, the cost of the plans is offset.

How much these plans do influence productivity has not been sufficiently studied. However, the average annual increase in output per hour, estimated to be between two and three percent, seems adequate to cover reasonable developments in industrial health, welfare, and retirement plans. If productivity continues to increase at the same rate in future years, the gains accruing to labor might well be distributed between higher real wages and larger insurance and pension benefits.

The important question remains, however, whether private benefit plans provide the best means of using a portion of the increasing national output per hour to provide protection against the economic and social hardships under discussion. More specifically, are these programs adequate in terms of the size and nature of the benefits and in terms of the number of individuals

that can be covered? The loss of income because of sickness, disability, and old age, and the need for periodic relaxation from work are problems that face the entire population and not industrial workers alone. These problems are particularly acute, of course, for all persons in the lower income groups.

How should our society meet these problems? In spite of, or even because of, the trend of employee benefit plans in industry, the major answer will probably be in the extension of publicly-supported social security. The evolution toward adequate, minimum, public protection against sickness and disability, as well as aid during old age and unemployment, has been under way for many years, and there is no reason to suppose that this evolution has been completed.⁷

As this evolution works itself out, benefit plans in industry will be increasingly thought of as *supplementary* programs. They will appear for the most part only where they can be supported by increased productivity and by worker contributions, both direct and indirect. Of course, various supplementary wage practices that have been included in the term "fringe benefits," such as paid vacations and holidays, do not fall within the scope of probable social security coverage. Almost cer-

⁶The tonnage royalties have been added directly to the price of coal. Unless higher productivity can reduce coal prices, the result may be an acceleration of the shift by consumers to other fuels.

⁷A bill for national health insurance, which failed, and a bill for increases in benefits and in coverage under existing social security legislation, which passed the House, have been before the present Congress. Three states, Rhode Island (1941), California (1946), and New Jersey (1948), have established compulsory systems of compensation for workers during periods of non-occupational sickness or disability.

tainly these will remain entirely in the area of company or company-union determination and a part of direct labor cost for the individual firms.

If there is any danger in the present trend of private plans in industry, it lies in the possibility that in some instances the collective bargaining process might push benefits to a point where unemployment or even business failures would result. However, any such tendency may be largely prevented if a comprehensive government program, both federal and state, is created to

meet minimum needs adequately. The advantages, from a social point of view, would be: a more uniform distribution of benefits, according to need; a more basic solution for the social problems involved; and a reduction of the danger of top-heavy burdens on unionized industries or companies. With such a program, private plans of a supplemental nature would be, by and large, more of a stabilizing influence on the economy than a burden on producers or consumers.

The Illinois Foundry Industry

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IN ILLINOIS, the foundry industry is a purchaser of raw materials, produced for the most part within the state, and a vendor of castings to industries, also mainly within the state. Thus, the Illinois foundry industry is closely integrated in the state's economy. The importance of this industry does not depend upon its size but on the fact that it is vital to nearly all other industries.

In 1947-1948, Illinois ranked third among the states in number of foundries, with 436 of the 5,452 reported in the United States. On the basis of type of metal cast, Illinois had from 6 to 10 percent of the total number of foundries in the country in each major class and accounted for 10 to 14 percent of the total quantity of castings produced. The number of foundry workers in Illinois was about a third of the workers employed in all machinery manufacture other than electrical in the state. They accounted for 2.7 percent of total employment in the state and for 5.8 percent of all manufacturing workers.

More foundries are located in Chicago than in any other city in the country, and additional establishments in Illinois and Indiana serve industrial activity in the Chicago metropolitan area. Illinois also ranks high among the states in production of materials required in the foundries, such as pig metal, scrap metal, fuels, foundry sands, refractory and binding clays, and lime-

stone and fluorspar fluxes; it leads in the production of foundry sands and fluorspar.

Foundry Production Requirements

Certain factors in the operation of Illinois foundries help to determine the numerical and geographical distribution of the establishments. The first group includes the materials and labor used in the production of castings. Both the materials required and the diversity of labor skills needed to produce castings are dependent on the type of metal cast and the method of casting (sand casting, permanent mold casting, and so forth). In a recent study, data for evaluating the factors of material and labor were obtained from a questionnaire survey of the state's foundries and from various sources in the literature.¹

It has been estimated that a foundry must handle from 150 to 200 tons of materials for each ton of castings shipped. Practically none of the foundries own or control facilities for the production of these materials; therefore, they are almost entirely dependent upon other industries for these vital supplies. The principal raw materials required by the foundries may be classified as those which perish in the process of casting and those which are permanent except for depreciation and obso-

¹ Bulletin 70, *The Foundry Industry in Illinois*, by Harry Czyzewski and Burton C. Person (Bureau of Economic and Business Research, University of Illinois. In press.)

lescence. Perishable materials peculiar to the foundry industry are the metallic charge which is melted (and perhaps refined somewhat); the fuel required for melting the metal; fluxes for refining the metal; air for combustion of fuel; water for cooling and flushing; mold materials such as sand, binders, plaster of Paris, and investment; and refractories for lining furnaces and ladles. Most permanent materials required by the industry are manufactured items, such as machines for sand and metal handling; flasks for molds; furnaces for melting, heat treating, and baking (cores); casting cleaning equipment; and casting handling equipment.

A great many substances are used in comparatively minor amounts, although they may be vital to the technical processes. These minor materials are normally readily available despite the fact that they may originate at great distances; because of the widespread distribution of foundries in the United States, a suitable distributor system for such foundry supplies is in operation. The transportation of materials used in large amounts by the foundries would entail considerable expense if they had to be shipped very far. Therefore, the source of a perishable material is an important factor in foundry operations. Illinois, as would be expected, has a reasonably good distribution of large-bulk foundry materials at the present time.

Although transportation of the large-bulk materials to the Illinois foundries is not a great cost factor, the handling of these same materials within the foundry is expensive.

Materials Constituting the Metallic Charge

The molten metal from which the casting is poured is derived from a metallic charge fired in the melting furnace. In many cases, as for most nonferrous castings, the metallic charge is made up of metal (in ingot or scrap form) of essentially the composition desired in the finished castings. In such cases the function of the furnace is entirely that of a receptacle in which melting is accomplished with a minimum alteration in the chemical composition of the metallic charge. On the other hand, the production of most ferrous metal castings involves a final metal composition produced by blending and partial refinement of a variety of materials in the metallic charge during the melting operation.

The ferrous castings are produced in the largest tonnages. The metallic charge for the production of gray iron castings is made up of pig iron, cast iron scrap, steel scrap, and ferroalloys. Of the three components of the metallic charge, pig iron makes up 50.7 percent; cast iron scrap, 33.8 percent; and steel scrap, 15.5 percent.

Pig iron, cast iron scrap, steel scrap, and ferroalloys also constitute the metallic charges in malleable iron foundries and in steel foundries, but the proportions of these materials vary. The pig iron used in the metallic charges in ferrous foundries is produced in blast furnaces located in the large steelmaking areas in the United States.

The ratio of pig iron consumption to tons of good castings produced by gray iron foundries is about 42 percent.

In the country as a whole, there was a deficiency of pig iron for production of gray iron and malleable iron castings until recently. Therefore, the ferrous foundries have had to decrease the amount of pig iron in metallic charges. However, Illinois produced pig iron in excess of its consumption within the state.

The production of pig iron requires two materials, iron ore and metallurgical coking coal, which are not at present obtainable in Illinois. Iron ores are transported on the Great Lakes from Minnesota and Michigan, and the metallurgical-coke grade of coal is shipped from West Virginia and eastern Kentucky. Large-scale production, nearness of markets, and the fact that Illinois is about midway between the sources of these two raw materials make the production of pig iron in Illinois profitable.

Pig iron and scrap together constitute 22.7 percent of the total manufacturing cost of making gray iron castings. Scrap is classified, according to source, as plant scrap and purchased scrap. Plant (or "home") scrap comes from the metal in gates, risers, and sprues which is removed from the casting proper in the foundry itself, and also from unsatisfactory castings. Plant scrap is insufficient in amount to meet the requirements of metallic charges; therefore other scrap is purchased from sources outside the foundry industry.

Ferroalloys which are used to increase the alloy composition of the casting metal, or for various technical operations, are a comparatively minor

component, in bulk, of metallic charges in ferrous foundries.

Nonferrous foundries do little blending of alloys in their melting furnaces. The metallic charge in nonferrous founding is made up of pig metal and scrap, but efforts are made to start with compositions the same as those desired in the finished castings. The only treatments given the metal in the foundry melting furnace are intended to prevent contamination of the metal, as by gases. The difficulty of blending nonferrous alloys has resulted in an industry devoted to blending and refining of nonferrous scrap metal, the secondary smelting industry. The secondary smelters produce pig metal for the foundries and for other uses. Pig metal for the nonferrous foundries is classed as primary metal—that which is produced from ore or refinement of compounds of the metal—and secondary metal. Scrap for the nonferrous foundries is usually plant scrap; if purchased, it must be carefully segregated and identified.

Aluminum-base alloys are among the most popular of the nonferrous casting alloys, in terms of quantity production. Almost all of the secondary production and part of the primary production of aluminum are used for castings.

Magnesium-alloy castings are produced in comparatively small amounts in Illinois. Since this is a comparatively new class of alloys for casting, their use may increase considerably. However, the production of magnesium alloys decreased sharply after the war.

Copper and copper-alloy castings are

produced in the greatest amount, by weight, of all of the nonferrous alloys.

The production of secondary metals (except that requiring large amounts of cheap electric power) is represented in Illinois at least in proportion to the consumption of these secondary metals within the state. The high industrialization of the state makes it a large producer of old and new scrap as well as a consumer of metal produced from the scrap.

Fuels Required for Smelting Metallic Charges in Foundries

All commercial industrial fuels, including gas, oil, electricity, and coal (as coke), are used to some degree in the melting of metallic charges in Illinois foundries. Except in the case of the cupola, which uses foundry coke, the fuels can be considered as technically equivalent, and the selection of furnace equipment for the control of the fuel can be based solely on the criteria of economy and availability.

In amount of metal produced, cupolas for the production of gray iron and malleable iron are the most important type of furnace used in Illinois foundries. The amount of foundry coke required by Illinois foundries can be estimated from data on either metallic charges or amount of molten metal produced. The normal ratio of coke consumption compared with metallic charge was formerly considered to be about 1 to 7 or 1 to 9. In the postwar period the ratio increased to about 1 to 4.7, as a result both of higher proportions of steel scrap in the metallic charge and of the inferior quality of coke that was available.

The plants producing foundry coke also produce artificial gas for heating. Artificial gas, as well as natural gas, oil, and electricity, is used by a large variety of consumers in a manufacturing state such as Illinois. As a consequence all these fuels are in considerable demand and are therefore comparatively expensive. On the other hand, the large number of consumers of these fuels in Illinois insures that supplies of them will be directed to the state. However, some of the fuels, especially electricity, are in such high demand that the coal-fired electrical generating plants cannot produce electricity to compete in cost with that of hydroelectric plants in less industrialized areas. Therefore, Illinois has comparatively few large electric furnaces for foundry use, or for other uses such as ferroalloy production or alumina reduction. To some extent crude oil from other states is refined in Illinois, and some refined petroleum products for industrial heating are obtained from refineries in other states. Natural gas also is obtained from other states in large quantities.

Molding Materials and Refractories Used in the Foundry

The most common mold material is sand; other mold materials used in lesser amounts are metals (which can withstand the contact of the molten metal being cast), plaster of Paris, and investment materials. The important refractories used in furnace and ladle linings in foundries are fire clay, fire brick, and silica. Refractory materials, principally sands, are also used for

blasting, because of their abrasive properties.

Almost all ferrous castings and more than half of all nonferrous castings are made in sand molds. It has been estimated that five to ten tons of sand for molds must be handled for every ton of castings produced. No comparable estimate of the consumption of metal for permanent molds or die-casting molds is available. However, sand for molds must be considered as a semi-perishable material, with a limited degree of reuse, whereas metal molds are permanent. The over-all consumption of metal for molds is therefore very much less than indicated by the comparative percentages of castings made in sand and in metal molds. Thus, sand is the principal material for molds.

Production of foundry sand in the state of Illinois accounted for 21 percent of the national output in 1942, and continues in that ratio. Therefore, foundry sand production in the state is far in excess of the requirements of Illinois foundries and provides them with this large-bulk material at lower transportation costs than would need to be met by more distant foundries. In spite of the large local production some special types of foundry sands—for example, facing sands—are obtained from other regions, namely, southern Wisconsin, New York, and Tennessee. These "imports" of sand, however, are of small bulk compared with the Illinois sands used domestically.

Labor Characteristics

The distribution of foundry employees in three classes, production,

office and supervisory, and technical and laboratory, was studied. The cost of labor is about 55 percent of the total manufacturing cost of producing gray iron castings. This comparatively large percentage of total cost probably parallels labor costs in other types of foundries, also. In this respect, the foundry differs from the mass-production fabricating industries, in which the proportion of total cost of manufacture expended for labor is smaller.

In all Illinois reporting foundries, technical and laboratory employees in 1947 composed from .3 of 1 percent to 4 percent of the total; office and supervisory workers, from 8 to 15 percent; and production employees from 83 to 91 percent. Average percentages were: production workers, 86.5; office and supervisory, 12.5; and technical and laboratory, 1.0. This percentage of technical and laboratory employees seems low for an industry in which technical control and services of such high caliber are required. However, much of the control and engineering work is done by employees classed as production or supervisory workers, in addition to or as part of their regular duties.

Because many of the production employees must be highly skilled in conducting and controlling the operations which they perform, the long periods of apprenticeship and training which must be given such employees account for a considerable part of foundry labor costs. The small foundry, with only a few experienced employees in each category, finds great difficulty in providing the necessary training programs. The average age of foundry

employees is high compared with that of workers in competitive industries, thus indicating an inadequacy of available replacements for disabilities and retirements among the skilled employees.

Degree of Mechanization

The high cost of the manual materials-handling operations in foundries is a substantial item of operating expense. Mechanized methods of handling materials can for the most part be evaluated, prior to installation, for their economic performance as replacement for the manual methods. The difficulty of standardizing many of the operations in the foundry makes it hard to estimate the "degree of mechanization" of the operations. For this study, Illinois foundries were asked to give the percentage of total metal poured that was poured on mold conveyor systems, as one index of the degree of mechanization of the foundry. Most installations of mold conveyor systems are integrated into a mechanical handling system in which the molten metal and the finished castings, as well as the molds, are handled mechanically.

The period of industrial expansion and modernization during World War II provided an extraordinary opportunity for foundries to extend the mechanization of their operations. Therefore the immediate postwar period should show the influence of the extent of mechanization during the war as well as in the prewar period. The results of this study indicate that the foundries have adopted current mechanization methods only to a small degree. The degree of mechanization

reported was low (below 35 percent) in all foundries.

Captive versus Jobbing Status of Foundries

Most commercial foundries do jobbing work. When a foundry is organized as an adjunct to a manufacturing establishment and produces castings for the parent concern, it is classed as a captive foundry. In many cases it has been found expedient for a captive foundry to take on additional work on a jobbing basis. Such a foundry is captive with respect to part of its output, and jobbing as to the remainder. The extent to which the output is captive may vary from time to time, and the "degree of captivity" is not constant. The extent of stability resulting from business for a parent firm is an important factor in foundry operation.

Captive status is the percentage of total production used within the company or controlling organization. Only in the foundries with more than 1,000 employees is there more captive than jobbing business. Foundries with fewer than 1,000 employees show a reasonably consistent relation between captive and jobbing business, with a captive status of about 30 percent.

In the "gray iron only" class, the captive status was about 33 percent. The captive status in the steel foundries was comparatively small. On the other hand, the foundries in the malleable iron and the "gray iron and other metals" classes reported a captive status greater than 50 percent. For the light metal foundries, the captive status was 25 percent in the "aluminum-alloy only" class, and 20 percent in the

"aluminum and other nonferrous metals" class. The captive status of the foundries in the copper-alloy class was about 50 percent.

Markets for Foundry Products

Markets for products of the Illinois foundries are a dominant factor in the numerical and geographical distribution of these foundries, as well as in determining the size and type of metal cast.

Seven consuming industries took most of the output of the foundries producing gray iron only. The large majority of markets for the gray iron castings produced in Illinois were within the state itself.

The principal part of the output of steel foundries went to four consuming industries. The pattern of consumption of steel castings produced in Illinois was similar to that for the United States in that the railroad industry took a substantial part (about one-fourth) of steel castings production in both Illinois and the nation. Markets for the Illinois steel castings are comparatively widely distributed among neighboring and more distant states.

Seven consuming industries took the principal part of the output of foundries in the malleable iron class. No single industry is considered a major consumer of malleable iron castings produced either on a national or a state basis. Markets for the Illinois malleable iron castings are also rather widely distributed.

The nonferrous, light-metal foundries of Illinois produced castings for various consuming industries in more evenly distributed percentages than any

other class. However, 85 percent of the markets for these light-metal (and other nonferrous) castings were in the state of Illinois. Five industries consumed the major part of the production of castings by foundries in the copper-alloy class.

Another aspect by which the markets for castings in the United States can be examined is the percentage of total material cost accounted for by castings, for a wide variety of consuming industries. The domestic home-use equipment seems sufficiently typical in that the percentage of total material cost accounted for by castings is high in simple unit parts, as in cast aluminum kitchenware, but the proportion decreases for more complex equipment to values from 39 to zero percent. In the latter case a comparatively small increase in the portion of the total raw material cost spent for castings would in most cases account for a substantial increase in the total amount of castings business. That is to say, if the foundry industry could "sell" the replacement of even a few of the parts made by other processes, such replacement would amount to a substantial portion of present castings production.

Illinois foundries, with few exceptions, are local industries and supply the requirements of a comparatively large number of customers in many consuming industries, most of which, however, are located near by. The foundry product as it leaves the plant is called "semi-fabricated." A semi-fabricated product is normally shipped only a short distance to be fully fabricated, in which condition it may have national and international distribution. Small Illinois

foundries for the most part distribute their production within the state. The largest establishments and the "specialty" foundries have a somewhat larger distribution of markets to neighboring states and even greater distances. The extremely local nature of foundry markets is indicated by the fact that, for most categories, 85 percent of the castings is consumed by Illinois industries, although the four largest geographic concentrations of Illinois foundries, or about 65 percent of all foundries in the state, are in counties on the state border.

In the ferrous classes, the gray iron foundries show the greatest concentration of local markets. The smallest of these foundries distribute most of their castings to Illinois industries; the largest serve markets somewhat farther away. In the period covered, Illinois industries consumed 87 percent of the gray iron castings produced by this group of foundries. The largest share of the production of the group to go to any one state was the 3.6 percent which was sent to Missouri. Only 1.5 percent of the castings was shipped to states other than the seven near-by states, and 0.5 percent of the production was listed as export.

Illinois industries consumed 45 percent of the output of all ferrous foundries other than those classified in the "gray iron only" class, with a production of over 10,000 tons of castings in 1947. The remainder was well distributed among the seven neighboring states, with 23 percent of the output shipped beyond these seven states and 1.6 percent shipped as export. The

large scale of operations of these foundries and the "specialty" nature of some of their products are directly related to the comparatively wide distribution of their markets.

The nonferrous concerns reporting to the study have very localized markets; 85 percent of their production is consumed by Illinois foundries. Only two percent of the output of this group of foundries was shipped beyond the seven neighboring states, and one percent of the output was exported.

Effect of Competition on the Foundry Industry

Thus, Illinois foundries serve local industry primarily, and few castings are sold to out-of-state industries. Likewise, foundries in other states do not ship many castings to Illinois industries and therefore do not constitute a great source of competition to foundries in the state. Imports of castings into the United States are negligible, and the nation's foundries meet little competition from foreign sources. The small imports of gray iron castings have consisted largely of cast iron pipe, which does not compete with Illinois foundries. The foundries in Illinois do not, in general, suffer from competition from foundries in other states or abroad.

An individual foundry, however, is exposed to competition from sources outside the foundry industry, by industries using other materials and other processing methods, and from inside the foundry industry, by foundries which produce castings from other types of metal and by different methods of

casting. Of course, a foundry must also compete with others in its own class on the basis of cost and quality.

Production in the foundry industry has not kept pace with the requirements of the mass-production manufacturing industries. In the early beginnings of the manufacture of metal products, castings were widely used. For example, early domestic heating and cooking stoves were made almost entirely of castings. The amount of casting used in such stoves at present is comparatively small. The distribution of products made from various materials and by various fabricating methods in a common domestic item, the refrigerator, shows that castings accounted for only about 2.5 percent of its total material cost. Other items that are directly competitive with castings account for 25.3 percent, and items used in less direct competition with castings (which are at present distinctly superior in cost and price to the castings which were replaced) for 19.6 percent of the total cost of materials. This illustrates the failure of the foundry industry to retain its former share of manufactured products.

The production of metal parts of complex shape which are desired by the consumer in small lots has always been an important activity in the foundry. The principal competition in the manufacture of such parts has come from the process of fabrication by welding of simple sections. Construction by weldments has been well developed and well publicized and has reduced the proportion of such parts produced by the foundries. Failures of

metal parts by breakage are much less frequent now than in the past because of improved technology of product design and manufacture. Now the serviceability of metal parts is more likely to be decreased by wear or corrosion. Metal parts may be "worn out" in this fashion when less than 5 percent by weight of the metal has been removed. Previously such parts would be replaced; if they were castings, they would likely be replaced by castings. The development of salvage methods—surface welding, metal spraying, and electroplating—has reduced the amount of such castings business. Thus, the foundry business has been reduced both by the requirements of the mass-production industries and by the competition of other fabricating methods in the production of small lots of parts.

Despite the loss of a considerable portion of their business to other industries, the general attitude of foundries casting various types of metal is that their competition is with other types of metals, rather than with other fabricating methods. The prevalent attitude in the industry seems to be that serious competition to individual foundries comes from within the industry itself rather than from outside.

Individual foundries must also compete in cost and quality with other foundries producing castings of the same type of metal. The complexity of the operations and the diversity in the size and number of castings that are required of a foundry make exact cost analysis difficult. The indeterminate nature of foundry costs makes pricing of the products somewhat speculative.

Total expenditures are met by an inexact distribution of cost to the individual castings, and competitive bidding may often result in work done at a loss. The nonferrous foundries are also competitive in quality of castings produced by different methods. The comparatively recent and rapid development of permanent mold casting and die casting, and to a lesser extent of investment casting, makes it necessary for nonferrous foundries to diversify their methods of casting or to recognize additional competition.

Outlook for the Illinois Foundries

The foundry industry has had such a long and basic role in the manufacturing scheme that it is not likely to be drastically affected by industrial changes in the near future. However, the importance of the industry to other manufacturers has been steadily decreasing for the past half-century. Recognition of this decline by members of the industry is causing more concentrated efforts to reverse this trend and to improve the status of the foundry industry. There seem to be good technical reasons for the possibility of increasing the importance of the foundry industry to all manufacturing.

The relationship between the Illinois foundries and the United States foundries will probably be maintained in the near future. That is, Illinois will probably continue to be the third state in order of number of foundries and in the amount of production of these foundries. Slow changes in distribution of foundries throughout the state will probably increase the proportion of

foundries in areas outside the Chicago metropolitan district. Decentralization of manufacturing industry will cause decentralization of foundry sites. The areas that can expect the most rapid increase in the number and output of foundries are the industrial areas on the main waterways—that is, the Mississippi River, the Illinois River, and the Ohio River—and on the principal railroad lines. It is the movement of raw materials into the foundry sites, rather than the distribution of products from the foundry, which requires extensive transportation facilities.

The distribution of the amount of production of castings in the individual foundries will probably change only slightly. Large foundries will undoubtedly increase their production rates, and the establishing of more large foundries can be anticipated, thereby tending to increase the number of high-production foundries. However, the historical role of the small foundry will also be favored by the decentralization of industry, because of the local-market nature of foundry product distribution. The numerically high production of nonferrous castings in small foundries by die casting and permanent mold methods is also expanding; this will tend to increase the number of small foundries. It is conceivable that the development of permanent-mold casting of ferrous metals may result in smaller ferrous foundries, in terms of number of employees, but increase actual production of ferrous castings.

The markets for foundry products are predominantly local industries within the state. Although certain specialty parts and special alloys have a

wider distribution, these applications are comparatively few in number and will probably continue to be minor factors in the over-all foundry industry of the state. Attempts to spread the distribution of local foundry products would primarily constitute competition within the foundry industry; as such, it would undoubtedly result in ultimate loss to the Illinois foundries, as well as to all foundries. Some increase in the distribution of the products of Illinois foundries may be possible in the directions in which the decentralized industries seem to be moving — along the Mississippi and the Ohio Rivers.

The markets for foundry products among the various industries may become more widely distributed than at present. Castings are used in a great many manufacturing industries, especially in equipment used for manufacture. Therefore, any increase in markets for castings must apparently come from replacement of other processing methods.

World War II and the immediate postwar period were marked by considerable shortages of many of the materials required in foundries. The supplies of most materials are now likely to increase in proportion to demand, and such materials as the pig metals, metal scrap, fuels, and sands will probably be in ample supply. There are several long-term factors that will cause shortages of some materials which are of importance to the economy of the state as a whole, as well as to the foundry industry. For example, foundry coke is made in Illinois from coals obtained from West Virginia and eastern Kentucky. The supply of these coking

coals is rapidly dwindling and suitable substitutes need to be developed. The state of Illinois has large reserves of bituminous coal which are now considered as non-coking grades. Experiments are now under way to utilize Illinois coals for metallurgical coke. It seems reasonable to expect these experiments to be sufficiently successful that much of the metallurgical and foundry coke in the state will be manufactured from local coals. Since the requirements on foundry sands will be modified in time, Illinois should continue to develop the utility of foundry sands and bonding clays available within the state. Thus, the state would maintain its position as a foremost supplier of such items, and these local sources of materials would remain available to the Illinois foundries.

The high degree of skill required of foundry production personnel makes the foundry labor supply critical. A plant which is established in a new area cannot usually draw its skilled labor from the area's working population; therefore, only a small foundry can be started, or a larger one so well backed financially that skilled labor can be attracted from other areas. The expansion of existing foundries is also limited by the availability of skilled manpower, and by the rate at which the necessary skills can be acquired by local manpower.

The geographical distribution of foundries is such that a small number of centrally located training centers (technical institutes or vocational schools) cannot reach all communities in which the skilled labor is required. With each foundry maintaining its own

training program, a high proportion of casting cost must be assigned to this training program. Only large industrial communities like the Chicago area can at present benefit from special training centers. Correspondence courses are already available through several national agencies of the foundry industry, but these have only limited value for developing manual skills. Another way to solve the problem of acquiring skilled labor in the foundry is to reduce the degree of skill required in foundry operations, by simplification of foundry procedures and development of technical controls independent of the production labor. This procedure is in line with the practices of many mass-production industries in the United States.

In order to reduce the degree of skill required of the production labor in the foundry, a considerable effort must be made to improve the technology of the foundry so that a small staff of technical employees can efficiently control its technical processes. The outcome must necessarily be an increase in the proportion of the total labor force made up of laboratory and technical employees. The present low proportion (1 percent) of such persons actually employed in the foundries does not represent all the technical employees that serve the industry. Commercial and consulting laboratories make control and development tests; equipment manufacturers and materials suppliers usually have a policy of technical service beyond the immediate responsibility for their products; and the industry's associations employ technical experts to assist their members. These

technical services will also be expanded with the increase in technical control in the foundry. The supply of technical labor is more easily assured than the supply of skilled production labor. Technical training is given in state colleges and universities. Students from various communities come to these educational centers for a period of training, and then go out to locate in all types of communities.

The trend to mechanization of materials-handling operations is part of the technical improvement of the foundries. Despite the unusual opportunities for such development during the war, the "degree of mechanization" in Illinois foundries is comparatively low. The tangible value of mechanization of materials-handling operations is easy to evaluate, and the low degree of mechanization at the present time indicates that foundry management has not been convinced that the mechanization now available is completely justified. Improvement of materials-handling seems to be a less direct approach than reduction of materials-handling. Foundrymen would prefer to simplify foundry procedures so that the materials to be handled are reduced in number and quantity.

The reduction and simplification of foundry procedures in permanent mold and die casting have undoubtedly contributed to the increased popularity of these methods of casting. The nature of the development of small foundries makes it apparent that they cannot make large capital investments for mechanization. Large foundries, and captive foundries with an assured market for specific classes of castings,

can more readily make the large investments needed. Existing foundries can be expected to increase their amounts of mechanization, but at a comparatively slow rate until foundry procedures are simplified. It is not likely that many new foundries will be started in Illinois in the next five years. However, any new foundries will be organized only if they are certain of markets, and probably as captive foundries, and their degree of mechanization will likely be greater than the average for existing foundries. The degree of mechanization of all foundries can be expected to increase.

The foundry industry has recognized that it is in an unsatisfactory position in the competition for the metal products markets. Its resources are limited and it suffers from serious differences in opinion within its ranks as to which development—decreased cost or improved quality—should be emphasized most. Naturally, both lower cost and improved quality of product are de-

sired by all foundrymen. But besides their resources for research and development, there are differences of opinion among practitioners, probably based primarily on the nature of the competition which particular advocates have in mind. The very serious need for product improvement can be emphasized by an analogy with another mass-production industry, namely automobile manufacture. If lower cost by mass-production methods had been the principal aim of the automotive industry, it is likely that the cost of a Ford Model T today would be very low, compared with its cost when it was a current model. However, the improvements in product, quality, and performance available in today's automobile are so outstanding that the Model T, even at an extremely low cost, would not be likely to command a large market at present. This danger of producing a low-cost but unwanted product must be taken into account by the foundry industry.

Family Buying: Who Does It? Who Influences It?

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FOR YEARS a statement has gone the rounds that women purchase 80 percent or more of the goods consumed by the family. In trying to run down this statement some years ago, reference was found to a survey made a number of years before by a New York department store which showed that the ratio of women to men customers was about 80 to 20. That proportion is about what might be expected in a metropolitan department store. However, an obvious mistake was made in assuming that the results would be the same for all types of stores in all parts of the country.

One amusing incident is told of an attempt to find the origin of the statement that women buy 80 percent of consumption goods. First, an executive of the National Retail Dry Goods Association knew of no such survey.¹ Similarly, a representative of the Advertising Bureau of the American Newspaper Publishers Association knew of no scientific study which showed the over-all percentage of buying done by women.²

Finally the investigator decided to go direct to the publishing house which most often quoted the figure of 80 percent, namely, the *Ladies Home Journal*

Division of the Curtis Publishing Company. There it was finally established that the figure came from a chart clipped from the *New York Times Magazine* and that the chart carried a footnote indicating the Institute of Life Insurance as its source. The Institute revealed that the figure came from a 1938 report put out by none other than the Curtis Publishing Company. Obviously, the investigator was riding quite a merry-go-round.

However, still further investigation showed that Curtis quoted a book published in 1934, whose author took the information from a Conference on the Problems of Household Buyers held at the University of Chicago in 1927.³ Apparently such estimates are like family heirlooms, handed down from generation to generation.

Need for Information on Family Buying

The persistence of this legendary figure for proportionate purchases by men and women buyers points up the fact that there has been no authentic information available as to what types and volumes of purchases are made or influenced by various members of the family. This condition has continued to

¹ Howard P. Abrahams, Sales Promotion Division.

² Hardy Burt, "Who's Passing the Buck?" *True* magazine, April, 1949.

³ Mary S. Branch, *Women and Wealth* (Chicago: University of Chicago Press, 1934).

hamper the merchandising activities of various groups for whom a knowledge of the purchases made by men and women and of how each sex influences the buying done by the other is extremely important.

Manufacturers need such information in planning their products and selecting outlets. Advertisers want to know the best media for reaching prospective customers; in the case of radio, they also need to know the best hours at which to broadcast their advertising. They want to know what appeals to make and the best type of copy to use. Retailers would be helped in selecting locations, planning stock, arranging goods, decorating their stores, and preparing advertisements. In short, almost every businessman who makes or sells consumer goods is interested in the relative importance of men and women in buying his product.

It is not enough to know who buys the product. Perhaps more important are the questions of who decides on the purchase and to what extent each sex is influenced by the other in deciding what to buy. It is not enough to know that breakfast cereals are bought largely by women in grocery stores. The woman may be only the purchasing agent buying the kind of cereals that her husband and children like. It is not enough to know that a man buys a herringbone, double-breasted suit. He may buy it to please his wife and not because he himself likes it.

Only in relatively recent years have factual data on this important subject been available. About 1930, the senior author of this article began experimenting to ascertain in what way re-

liable information on family purchases could be obtained. It was found that fairly adequate data could be secured by family-to-family interviews in which graduate students, trained as interviewers, used what came to be called the "probing technique." However, this method is slow and expensive and none too reliable in determining influences. The difficulty arises partly from the fact that persons may not be entirely frank in describing how they were influenced by other members of the family in making purchases. Perhaps more serious is the fact that they are often unconscious of such influences. People as a rule do not analyze the motives for all their actions and hence cannot actually measure the strength of various factors influencing their various purchases.

To meet these difficulties, university students in marketing classes were asked to fill out questionnaires stating by whom goods were purchased in their parental homes. It was felt that children know who makes various purchases and — even more important — children are often much more cognizant of how each parent influences the other than are the parents themselves. Marketing students understand the purpose of such studies and generally are sympathetic with their objectives. The purpose of the study was carefully explained and it was made clear that response was entirely voluntary. The students were surprisingly frank and cooperated exceptionally well. This first survey was conducted in 1931-1932, with University of Illinois students cooperating. A summary of the results was published in *Advertising*

and Selling for June 21, 1934. Two limitations of this study were that most of the respondents lived in Illinois and that the sample was heavily weighted with middle-income families. No individuals, no young married families, and no childless families were included.

A number of surveys have been made to determine the proportions of goods bought by various members of the family. With the improvement in survey and sampling techniques and organizations during the past fifteen years, undoubtedly the accuracy of results has been increased. Some surveys may cover reasonably representative samples. Most of them were made by asking the wife or husband, by personal interview or mail, who purchased various commodities. Personal interviewers calling from house to house usually interview a disproportionate number of women. Even though they may ascertain the number of purchases made by men and women, they seldom obtain detailed or accurate information on the influence of various members of the family in determining what is to be bought. Another flaw in some surveys is sponsor-bias. That is, a magazine read largely by women wants to "prove" that women do most of the buying, whereas one read mostly by men hopes to show that men buy more goods than is generally supposed.

The 1949 Survey: Scope and Procedure

The survey of family purchasing habits carried on this year under the auspices of the University of Illinois was undertaken to secure a wider geo-

graphical base than that used in the 1931-1932 investigation, as well as to obtain later and more detailed information which would portray conditions in a period some two decades later than that of the earlier study.

With these objectives, marketing students in six other universities, in addition to classes at the University of Illinois, were asked to fill out questionnaires similar to those on which the previous survey was based. In all, 1,225 replies were received from the seven schools: Illinois, Alabama, Miami (Florida), Nebraska, New York, Pittsburgh, and Washington (state).⁴ It was thought that by scattering the questionnaires widely a better picture of the national situation could be obtained. Table 1 shows the distribution of the sample by family income and place of residence.

Only about 6 percent of the respondents were from low-income families (less than \$2,500) as compared with 25 to 27 percent of the total population in that income group. Thus, the totals are heavily weighted by middle- and upper-income families. Variations in family purchasing according to income groups will be discussed later; on the whole, they seem to be of relatively minor importance. Apparently, the failure to secure a larger representation of low-income families does not seriously affect the results.

Relatively few farm families are represented, and the results should be

⁴The authors wish to express their appreciation to Professors G. N. Merry, New York; Arend E. Boer, Pittsburgh; Earl S. Fullbrook, Nebraska; Donald F. Mulvihill, Alabama; Victor W. Bennett, Miami; and Henry A. Burd, Washington.

TABLE 1
COMPOSITION OF SAMPLE FOR 1949 SURVEY

Income Group	Number of families	Percent of total	Place of Residence	Number of families	Percent of total
A (\$7,200 or more) . .	380	32	Large cities (over 1,000,000)	173	14
B (\$4,200-\$7,199) . . .	441	37	Medium-sized cities (100,000-1,000,000)	376	32
C (\$2,500-\$4,199) . . .	303	25	Small cities (10,000-100,000)	335	28
D-E (less than \$2,500)	77	6	Small towns (1,000-10,000) .	194	16
			Villages and farms	124	10

taken as referring to nonfarm households.⁵ The distribution of the returns agrees fairly closely with the proportions of the population in villages, small towns, small cities, and large cities. Variations in buying among residents of small and large towns will be discussed later in this article.

The advantages of the method used here are: (a) more complete and accurate information is obtained on how much the actual buyers are influenced by the desires and preferences of other members of the family; (b) the relative importance of various members of the family in buying and in influencing the purchase of various commodities is shown; and (c) variations in purchasing habits are shown. The figures in Tables 3 and 4 show the proportions of families in which wives, husbands, and children buy the various goods listed; similar information was secured for the influence exerted by members of the family on such purchases.

⁵ Some studies have indicated that the farmer buys a larger proportion of the goods used by the family than the city man does. If that is the case, the application of the results of this study to the total population would understate the importance of men as buyers.

In Table 2 it can be seen that women make approximately 90 percent of the purchases of their own clothing, women's toilet articles, and draperies and curtains. They make some 80 percent of the purchases of girls' clothing and kitchenware. They make two-thirds of the purchases of the groceries and in total value this is by far their most important field of buying. Women make about 60 percent of the purchases of floor coverings and jewelry, and only a slightly lower proportion of boys' clothing and drugs. They buy about two-fifths of the electrical appliances, one-third of the furniture, and one-fourth of men's furnishings and hardware. Women are of less importance in buying the other four commodities listed, making less than one-fifth of the purchases of household fuel, one-tenth of gasoline and oil, and only 4 percent of men's suits and overcoats.

Men purchase approximately three-fourths of their own clothing and toilet articles, and the fuel used; 80 percent of the gasoline and oil; two-thirds of the automobiles, hardware, and men's furnishings; one-third of the drugs and electrical appliances; one-fourth of the

jewelry; and one-fifth of the groceries. Men are of minor importance as purchasers of the other commodities.

More than half of the furniture is bought jointly by husband and wife. Men and women often shop together for rugs and carpets (32 percent), automobiles (24 percent), and men's suits and overcoats (21 percent). There is some shopping together for jewelry, groceries, and drugs. It is of less importance with other goods.

Children make more than one-tenth of the purchases of their own clothing and shop with their parents in buying additional garments. They buy 5 per-

cent of the groceries and 6 percent of the gasoline and oil, but the dollar value of their purchases is probably somewhat less than indicated by these percentages. They are of lesser importance in the purchase of the other selected commodities. It should be pointed out here that the list did not include some items of particular importance to children, such as school supplies, toys, athletic goods, magazines and books, ice cream, candy, and soft drinks.

The various commodities listed are obviously of unequal importance. They were therefore weighted by their ap-

TABLE 2
ACTUAL PURCHASING AND INFLUENCE EXERTED ON
PURCHASING OF NINETEEN COMMODITIES
BY WOMEN, MEN, AND CHILDREN

Commodity	Percentages of purchases made by				Percentages of purchases influenced by		
	Women	Men	Together ^a	Children	Women	Men	Children
Men's suits and overcoats	4	74	21	1	27	70	3
Men's furnishings.....	27	63	8	2	29	68	3
Women's clothing.....	88	5	6	1	81	16	3
Boys' clothing.....	57	17	14	12	57	21	22
Girls' clothing.....	78	5	6	11	62	12	26
Men's toilet articles.....	23	72	3	2	17	81	2
Women's toilet articles..	88	8	1	3	90	8	2
Drugs.....	55	35	8	2	56	41	3
Furniture.....	32	12	56	..	62	34	4
Draperies and curtains..	89	2	9	..	83	13	4
Rugs and carpets.....	61	7	32	..	72	25	3
Electrical appliances....	41	37	21	1	52	45	3
Kitchenware.....	83	10	6	1	85	13	2
Hardware.....	25	65	7	3	30	65	5
Automobiles.....	6	68	24	2	25	68	7
Gas and oil.....	11	79	4	6	11	84	5
Fuel.....	18	74	7	1	26	72	2
Jewelry.....	58	25	13	4	69	26	5
Groceries.....	67	20	8	5	66	26	8

^a In most cases, women and men together; for children's clothing, parent and child together.

proximate value in the 1948 expenditures of American families. When this was done, the results indicated that women made 55 percent of the purchases of goods consumed by American families; men, 30 percent; men and women shopping together, 11 percent; and children, 4 percent.⁶ These percentages are based on the assumptions that the selected commodities and the sample used are representative and that individual purchases made by men and women were of equal value. It is believed that the commodities are reasonably representative. As previously indicated, the sample was made up of middle-aged and older families with children; it did not include unmarried individuals, young families, or families without children.

Applying the estimated percentages to \$125,719 million, the Department of Commerce figure for personal consumption expenditures in 1948 exclusive of services, women's purchases amounted to \$69,145 million; men accounted for \$37,716 million; men and women together, for \$13,829 million; and children, for \$5,029 million.

The seller, however, may be more interested in the influence which various members of the family exercise on a purchase than on the actual buying of the commodity. The person or persons who determine what is to be bought may be more important to him than the person who goes to the store and makes the purchase. It can be seen from the figures in Table 2 that women make 88 percent of the pur-

chases of women's clothing, but exert only 81 percent of the influence determining what clothes are to be bought. Men buy only 5 percent of women's clothing but have 16 percent of the total influence on what is to be bought. Women make only 32 percent of the purchases of furniture but they have 62 percent of the influence in determining purchases.

Weighting influence in the same way as purchases were, we find that women have 57 percent of the voice, or "say," in determining what is to be bought; men have 35 percent of the influence, and children, 8 percent. Thus the influence of women in determining purchases is somewhat greater than their actual purchases and the influence of men is considerably greater. This difference may be explained by the fact that no joint influence is shown. Of course, a considerable proportion of purchases may be influenced by both women and men. In this study, however, the influence of each is measured and listed separately. Possibly in younger families there would be more shopping together by husband and wife and in older childless families less.

Earlier in the article it was pointed out that the sample did not contain the proper proportion of low-income families, but that this fact did not appear to influence the results greatly.

Variations with Income

Five commodities — men's furnishings, women's clothing, furniture, electrical appliances, and groceries were selected for detailed analysis to determine what variations occur with differences of incomes and places of resi-

⁶ The percentages used are based on classifications made by the United States Department of Commerce, as published in the *Survey of Current Business* for July, 1949.

TABLE 3
PERCENTAGES OF WOMEN, MEN, AND CHILDREN IN SELECTED INCOME GROUPS,
REPORTED AS PURCHASING FIVE COMMODITIES

Income group; Percentage bought	Men's furnishings				Women's clothing				Furniture				Electrical appliances				Groceries			
	W	M	T	C	W	M	T	C	W	M	T	C	W	M	T	C	W	M	T	C
A:																				
0.....	29	5	63	86	1	71	70	93	34	60	26	100	21	24	55	96	2	34	72	74
1-33.....	40	17	30	14	1	28	26	7	26	28	14	..	24	28	23	4	8	34	22	23
34-66.....	15	21	5	..	3	1	2	..	14	9	12	..	26	22	13	..	18	34	5	3
67-99.....	12	42	1	..	37	..	..	..	14	3	18	..	18	15	6	..	44	15	1	..
100.....	4	15	1	..	58	..	2	..	12	..	30	..	10	11	3	..	28	6	*	..
Average.....	28	62	9	1	90	4	5	1	31	12	57	0	43	39	18	*	65	25	5	5
B:																				
0.....	27	8	66	88	2	78	81	92	36	64	36	99	17	27	47	94	5	26	62	70
1-33.....	44	12	29	12	..	20	17	8	24	25	7	1	34	26	23	6	10	58	29	28
34-66.....	15	24	2	..	3	1	1	..	13	7	13	..	27	22	16	..	20	10	4	..
67-99.....	11	37	..	..	31	1	..	..	14	3	15	..	15	20	6	..	50	4	3	2
100.....	3	19	2	..	64	..	1	..	13	1	29	..	7	5	8	..	15	2	2	..
Average.....	27	62	9	2	90	4	5	1	36	12	51	*	38	36	25	1	65	20	10	5
C:																				
0.....	25	4	50	91	1	73	69	99	42	56	18	93	26	30	50	87	5	28	66	67
1-33.....	46	15	42	9	1	27	29	1	28	33	12	7	27	25	20	10	15	46	22	30
34-66.....	18	24	6	..	3	..	2	..	14	5	11	..	25	22	13	3	29	17	5	2
67-99.....	10	44	1	..	39	..	..	..	1	2	24	..	17	15	7	..	36	9	4	1
100.....	1	13	1	..	56	..	..	..	15	4	35	..	5	8	10	..	15	..	3	..
Average.....	26	63	10	1	90	4	6	*	26	13	60	1	36	35	26	3	59	23	12	6
D-E:																				
0.....	34	3	75	93	6	79	77	88	35	55	45	93	22	30	39	81	2	30	81	67
1-33.....	38	10	22	7	3	18	19	12	13	29	10	7	25	36	32	19	6	46	19	33
34-66.....	25	28	3	..	6	..	4	..	26	13	16	..	16	16	16	..	31	20	..	..
67-99.....	3	31	..	..	24	3	..	..	10	..	3	..	23	16	2	..	46	4	..	..
100.....	..	28	..	..	61	..	..	..	17	3	26	..	14	2	12	..	15	..	..	..
Average.....	21	72	6	1	87	6	5	2	43	15	41	1	44	28	26	2	70	21	3	6

NOTE: W, women; M, men; T, women and men together (includes parents and children); C, children.

* Less than 0.05 percent.

dence. Table 3 shows the data on these commodities classified by income group.

Broadly speaking, the same pattern of purchasing is found in families in all income groups. However, low-income families show some noticeable differences from middle- and upper-income families. Among low-income families there is somewhat less shopping together by husband and wife for furniture, groceries, and men's furnishings. The wife buys a slightly larger proportion of groceries, furniture, and electrical appliances, and the husband buys a larger proportion of his own and his wife's clothing. In middle-income families husband and wife shop together for groceries somewhat more frequently than in upper- and lower-income families.

The data on the buying of the five commodities thus classified by income group were further subdivided by town size. The results were largely negative, as few marked differences were found. About the only one of importance was among C-income families (\$2,500-\$4,200), in which it was found that women did considerably more and men less buying in large cities than in small towns and cities. No important differences in the amount of influence exerted by women and men on family purchases were found with place of residence within an income group. However, among these families, men in large cities have somewhat less influence on family purchases than do those living in smaller cities.

Variations with Place of Residence

Buying habits vary with the size of the town in which families live. As a

rule, men are more important as buyers of consumer goods in small towns and cities than in large cities. The probable explanation is the greater distance between the home and the place of employment in the large city. The husband is not so likely to make purchases on his way home from work; once home he may be located at a distance from the stores, and he may have less time at home when near-by stores are open.

The proportions of furniture, electrical appliances, groceries, and men's clothing purchases by men are smaller in the larger cities. In the case of groceries, however, men appear to do more buying in small cities than in small towns and villages. Men are least important in buying groceries in the large cities. The size of the town appears to have little effect on the proportion of women's clothing bought by women. They buy most of it in towns of all sizes.

Percentages of families in which men's furnishings were bought by men ranged from 58 in large cities to 73 in villages; percentages for families in which furniture was bought by men varied from 8 in large cities to 20 in small towns. Percentages for groceries were 11 in large cities, 30 in small cities, and 22 in small towns and villages. However, that percentage is twice the figure for large cities. Percentages for electrical appliances were 29 in large cities, 45 in small cities, and 36 in small towns and villages. The size of the town did not appear to have any great influence on the proportion of goods bought by husband and wife

TABLE 4
PERCENTAGES OF WOMEN, MEN, AND CHILDREN REPORTED
AS PURCHASING NINETEEN COMMODITIES

Percentage bought	Men's suits and overcoats			Men's furnishings			Women's clothing			Boys' clothing			Girls' clothing		
	W	M	T	W	M	T	W	M	T	W	M	T	W	M	T
0.....	75	9	48	95	27	7	2	75	74	16	49	60	10	77	77
1-33.....	21	8	31	5	41	14	1	24	23	14	34	29	4	20	18
34-66.....	3	12	9	..	17	22	3	1	1	20	9	6	15	3	4
67-99.....	1	33	5	..	13	40	1	37	*	35	5	3	39	..	..
100.....	*	38	7	..	3	17	2	57	*	15	3	2	32	..	1
Average.....	4	74	21	1	28	63	8	88	6	57	17	14	78	5	11
	Men's toilet articles			Women's toilet articles			Drugs			Furniture			Draperies and curtains		
	W	M	T	W	M	T	W	M	T	W	M	T	W	M	T
0.....	36	6	86	90	1	68	87	8	76	37	62	27	3	90	74
1-33.....	37	10	12	9	1	28	6	14	16	25	27	11	2	8	18
34-66.....	16	15	1	1	3	2	1	37	4	14	7	12	5	2	4
67-99.....	8	38	..	*	33	1	*	31	9	13	3	17	23	*	2
100.....	3	31	1	..	62	1	..	10	2	10	1	33	67	..	3
Average.....	23	72	3	2	88	8	2	55	8	33	11	56	89	2	9
	Rugs and carpets			Electrical appliances			Kitchenware			Hardware			Automobiles		
	W	M	T	W	M	T	W	M	T	W	M	T	W	M	T
0.....	19	80	45	98	21	28	54	2	61	37	12	79	88	26	68
1-33.....	9	13	20	2	27	26	22	7	32	35	7	15	5	2	6
34-66.....	14	5	9	..	26	21	13	11	5	15	21	3	3	5	3
67-99.....	24	1	8	..	17	17	5	38	*	8	35	1	1	10	2
100.....	34	1	18	..	9	8	6	47	1	5	25	2	3	57	21
Average.....	61	7	32	*	41	37	21	83	6	25	65	7	6	68	24
	Gas and oil			Fuel			Jewelry			Groceries					
	W	M	T	W	M	T	W	M	T	W	M	T	W	M	T
0.....	65	6	91	73	69	18	90	7	68	6	31	68	71		
1-33.....	22	4	5	22	10	4	3	14	18	10	50	24	27		
34-66.....	10	12	1	3	9	9	1	31	7	24	13	3	2		
67-99.....	2	24	1	1	3	10	1	33	3	43	5	2	*		
100.....	2	54	2	1	9	59	5	15	4	17	1	2	*		
Average.....	11	79	4	6	18	74	7	58	13	67	20	8	5		

shopping together — at least, not for the five commodities studied.

Variation Among Families

From Table 4 it can be seen that in 75 percent of the families women alone buy none of the men's suits and overcoats; in 21 percent of the families they buy less than one-third of these garments; in 3 percent of the families they buy between one-third and two-thirds of men's suits and overcoats; and in one percent of the families they buy more than two-thirds of these garments. In the second column we see that in 9 percent of the families men alone buy none of their suits and overcoats; in 8 percent of the families they buy less than one-third of these garments; in 12 percent of the families they buy from one-third to two-thirds of their suits and overcoats; in 33 percent of the families they buy from 67 to 99 percent of these garments; and in 38 percent of the families they buy all their suits and overcoats. The third column shows that in 48 percent of the families men and women never shop together for men's suits and overcoats; in 31 percent of the families husband and wife shop together for less than one-third of these garments; in 9 percent of the families men and women shopping together buy between one-third and two-thirds of men's suits and overcoats; in 5 percent of the families they buy from 67 to 99 percent of these garments; and in 7 percent of the families all men's suits and overcoats are bought by husband and wife together. In the fourth column we see that in 95 percent of the families children buy none of the men's suits and

overcoats, whereas in 5 percent of the families they do make some such purchases.

Similar information is given in this table for 18 other classes of commodities.

The variations in buying habits among families may be more important to advertisers and retailers than are the average figures. To illustrate, 88 percent of women's clothing is bought by women alone, 5 percent by men alone, 6 percent by men and women shopping together, and 1 percent by children. The advertiser might therefore conclude that as men buy less than 10 percent of women's clothing they can be ignored. However, the figures show that in 25 percent of the families men buy some clothing for women. Further, in 26 percent of the families women and men shop together for women's clothing. We cannot add these two percentages and conclude that men have a part in buying women's clothes in 51 percent of the families, for in some families the man alone buys some of his wife's clothes and shops with his wife for others. However, it is obvious that men in a considerable proportion of families have a part in the purchase of women's clothes.

A study of the figures for the other 18 commodities will show that both men and women are important in their purchase.

Even more striking variations among families in the influence exerted by various members of the family on the purchase of different commodities are revealed in Table 5. For example, in 79 percent of the families women have

TABLE 5
PERCENTAGES OF WOMEN, MEN, AND CHILDREN REPORTED
AS INFLUENCING PURCHASES OF NINETEEN COMMODITIES

Percentage of influence	Men's suits and overcoats			Men's furnishings			Women's clothing			Boys' clothing			Girls' clothing		
	W	M	C	W	M	C	W	M	C	W	M	C	W	M	C
0.....	21	2	84	17	2	86	4	30	81	8	31	38	13	52	36
1-33.....	45	8	15	47	10	13	3	59	19	19	48	38	8	40	33
34-66.....	27	32	1	26	27	1	9	8	..	36	17	18	35	7	25
67-99.....	6	45	..	9	44	..	56	2	..	31	2	5	31	1	4
100.....	1	13	..	1	17	..	28	1	..	6	1	1	13	..	2
Average.....	27	70	3	29	69	2	81	16	3	57	21	22	62	12	26
	Men's toilet articles			Women's toilet articles			Drugs			Furniture			Draperies and curtains		
	W	M	C	W	M	C	W	M	C	W	M	C	W	M	C
0.....	42	3	89	1	68	89	2	8	82	1	7	78	1	42	74
1-33.....	41	4	9	1	27	10	7	24	18	1	42	21	1	47	26
34-66.....	9	9	1	2	3	1	60	59	..	53	49	1	13	10	..
67-99.....	4	42	1	31	1	..	21	6	..	40	1	..	50	1	..
100.....	4	42	..	65	1	..	10	3	..	5	1	..	35	..	..
Average.....	18	80	2	90	8	2	56	41	3	64	33	3	83	13	4
	Rugs and carpets			Electrical appliances			Kitchenware			Hardware			Automobiles		
	W	M	C	W	M	C	W	M	C	W	M	C	W	M	C
0.....	1	22	81	4	9	80	1	44	85	21	5	80	22	3	65
1-33.....	3	45	18	20	27	19	*	45	14	43	9	17	47	3	31
34-66.....	31	31	1	45	42	1	12	9	1	23	25	2	27	34	3
67-99.....	45	2	..	25	18	*	46	1	..	8	44	1	2	40	1
100.....	20	*	..	6	4	..	41	1	..	5	17	..	2	20	..
Average.....	73	24	3	52	45	3	85	13	2	29	68	3	25	69	6
	Gas and oil			Fuel			Jewelry			Groceries					
	W	M	C	W	M	C	W	M	C	W	M	C			
0.....	66	3	78	45	10	94	2	20	73	1	15	59			
1-33.....	21	3	18	23	5	5	5	47	24	8	52	37			
34-66.....	10	14	4	22	24	1	32	29	3	35	28	4			
67-99.....	1	22	*	4	21	*	44	3	*	42	4	..			
100.....	2	58	*	6	40	*	17	1	*	14	1	..			
Average.....	11	84	5	25	73	2	70	26	5	66	27	7			

NORE: W, women; M, men; C, children.

some influence on the purchase of men's suits and overcoats. In 70 percent of the families men have some influence on the purchase of women's clothing. A study of family variations in influence reveals other interesting situations. In only 34 percent of the families do women have any influence in the purchase of gasoline and oil. In 55 percent of the families they have some influence on the purchase of fuel, and in 78 percent of the families they have some influence in the purchase of automobiles. On the other hand, in 52 percent of the families men have no influence in the purchase of girls' clothing; in 68 percent of the families they have no influence on the purchase of women's toilet articles; in

44 percent of the families they have no influence in the purchase of kitchenware, and in 42 percent of the families they have no influence on the purchase of draperies and curtains.⁷

Changes in Buying Habits, Late 1920's to Early 1940's

The information received from University of Illinois students in the 1949 survey was tabulated separately and compared with that received in the former study. Comparative figures for the two studies are shown in Table 6.

The general buying pattern is much the same although some rather noteworthy changes appear. On the whole,

⁷ Tables giving the detailed figures are not reproduced here.

TABLE 6
COMPARATIVE PERCENTAGES OF WOMEN, MEN, AND CHILDREN
REPORTED AS PURCHASING SEVENTEEN COMMODITIES,
1920's AND 1940's

Commodity	1931-32 Survey (late 1920's)				1949 Survey* (early 1940's)			
	Women	Men	Togeth- er	Child- ren	Women	Men	Togeth- er	Child- ren
Men's suits.....	3	76	21	..	9	74	15	2
Men's furnishings.....	27	64	8	1	23	66	9	2
Women's clothing.....	98	1	1	..	89	6	3	2
Men's toilet articles.....	25	74	1	..	15	76	8	6
Women's toilet articles..	97	2	..	1	97	5	1	3
Drugs.....	50	43	6	1	59	32	8	1
Furniture.....	31	11	58	..	31	16	53	..
Draperies.....	93	2	5	..	88	3	8	1
Rugs (and carpet).....	51	6	43	..	48	7	45	..
Electrical appliances....	41	37	22	..	31	47	21	7
Kitchenware.....	94	4	2	..	86	6	7	1
Hardware.....	7	90	2	1	28	66	5	1
Automobiles.....	5	60	35	..	3	63	33	1
Gas and oil.....	9	85	4	2	10	80	7	3
Fuel.....	16	82	2	..	6	84	7	3
Jewelry.....	55	23	20	2	59	25	13	3
Groceries.....	74	17	4	5	67	17	10	6

* Data from University of Illinois questionnaires only.

men are making a somewhat larger proportion of the family's purchases, women somewhat less, children slightly more, and there seems to be a slight increase in shopping together by husband and wife.

Men are of somewhat greater importance in buying what have been considered "women's" goods—women's clothes, women's toilet articles, draperies, and kitchenware.

These articles are still bought largely by women, but the increase in buying by men is noteworthy. Men also buy a somewhat larger proportion of the family's furniture.

There has been an increase in shopping together for groceries, women's clothes, kitchenware, draperies, hardware, gas and oil, and drugs. In the case of groceries this may be caused by the increased patronage of supermarkets, where foods are purchased in larger quantities and brought home in

the family car. On the other hand, there are decreases in the proportions of men's suits, furniture, and jewelry bought by husband and wife together.

Women make a smaller proportion of the purchases of groceries, women's clothing, rugs, draperies, electrical appliances, men's toilet articles, and fuel. They buy considerably larger proportions of the drugs and hardware, and slightly more of the jewelry. Hardware seems to be losing its place as a "man's" item.

Children are of minor importance as buyers for the family. However, there has been a considerable increase in their relative importance. They buy larger proportions of clothing for men and women, toilet articles, fuel, and gasoline. Their purchases of clothing and toilet articles may be largely gift goods and may reflect their increased buying power.

Influence of Age on Family Savings

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THE ACCUMULATION and use of savings of individuals may have important effects on the economy, and hence the probable future course of personal saving¹ and its components is a matter of considerable interest. An important factor affecting the rate of saving, and one that promises to be increasingly so in the future, is the age level of the population.

Savings of individuals and unincorporated businesses started to rise from a postwar low in the latter part of 1947 and increased through the third quarter of 1948. Since then saving appears to have leveled off. In the September issue of the *Survey of Current Business*, Irwin Friend sums up the present situation as to the balance of additions to savings and withdrawal of savings as follows:

The increased rate of personal saving characterizing the past year is closer to a normal rate of saving than that prevailing in 1947. Moreover, the prewar data do not lead to the conclusion that current saving is greatly out of line in either direction. . . . However, there are temporary factors still affecting saving in both directions, including some residue of deferred demand on the one hand and some postponement

¹ "Personal or private noncorporate saving, as defined by the Department of Commerce in its national income and product accounts, is the difference between disposable personal income (i.e., personal income less personal taxes) and personal consumption expenditures. This is equivalent to the increase in personal or private noncorporate assets less the increase in liabilities, exclusive of gains or losses from revaluation of assets." p. 9.

of purchasing in expectation of price declines on the other. Thus it will take some time for the pattern of postwar saving to become apparent.

Viewed from the standpoint of human motivations, the behavior of the statistical series "personal saving" has been entirely "normal" both during and after the war. No other statistical series represents so much a summation of the hopes and fears of the millions of families and individuals that make up this country.

The fundamental incentives for the accumulation of assets, for the liquidation of assets, and for the use of credit in its many forms can easily be ignored when their crucial effects operate uniformly year after year in relation to general economic developments. War periods intensify basic human wants and at the same time handicap their fulfillment so that postwar periods are certain to be marked by strong evidence of the forces underlying all economic activity. The deviation of statistical series, like personal saving, from prewar formulas in the war and immediate postwar years is entirely a manifestation of the normal behavior of human beings in pursuit of specified ends.

Fortunately, it is no longer necessary to rely on intuition or imagination to read behind the impersonal billions of dollars that make up such a statistical series into the purposes and actions of the millions of individuals that on the one hand cumulate to the tremendous

aggregates, and on the other to withdrawal. The Surveys of Consumer Finances of the Federal Reserve Board each year since 1946 are gradually revealing in solid statistical form certain fundamental connections between basic purposes of the individuals in the economy and their actions, first as savers and investors, and then as consumers using up their savings. When the results of these surveys have been sufficiently analyzed, they are sure to increase greatly our knowledge of when and why people save and dissave, and improve the basis for predicting the course of consumer spending and saving. One thing especially comes more and more to the fore as data from these annual investigations accumulate, namely, the great importance of the age cycle of human activities on the building up of savings and their use.

The Cycle of Family Saving. The first of these inquiries, in early 1946, brings out clearly the purposes for saving and expresses the correspondence between the age cycle and the savings of families and individuals counted as separate and independent spending units, as the following percentages show:²

<i>Purposes in saving</i>	<i>Percentage of spending units</i>
Purchase of home or other real estate.....	17
Investment in business.....	5*
Consumption, including durable goods.....	9
Children's future.....	17
Contingencies.....	33*
Retirement.....	27

The purposes for savings listed above

² *Federal Reserve Bulletin*, June, 1947, p. 654. The figures marked * are estimates for groups of detailed purposes listed in the report.

cover a lifetime pattern of individuals from establishing a family, assuring its support, providing for the children, arranging for insurance against emergencies, and finally taking care of old age and retirement.

The actual reduction of liquid assets followed a similar pattern of purposes in each of the four years for which the information has been recorded. Homes were purchased or furnished, businesses were acquired or expanded, emergencies were met, children were educated with the assets accumulated in former years.³ As the purposes for saving and the purposes in dissaving so clearly suggest a variation with the age of the family or individual, it seems almost certain that the use of income, the response to increased income, and the pattern of spending and saving must all vary significantly from youth to old age.

The human effects of the war centered on the young who were drawn into war activities; and the developments of the postwar period in personal consumption expenditures and personal savings were in large measure a reflection of the return of the young people to the pursuit of peacetime careers. In this postwar situation, conditions were unusually favorable to giving them a start on independent careers.

It may be wise to ask whether it takes a war to bring out the potential importance of the younger age brackets as consumers and investors. It is quite possible that the share in the distribu-

³ See, for example, the data for 1948 in the August, 1949, issue of the *Federal Reserve Bulletin*, p. 906.

tion of purchasing power going to the young people, whose deferred demand is in a sense limitless, is an extremely important variable to consider in analyzing and forecasting the course of economic developments.

Home Building an Important Factor in Saving

The establishment of a home, perhaps calling for the purchase of a dwelling and almost always for the acquiring of major furnishings, is a major purpose of making savings. The urge for a separate dwelling is not, however, always fulfilled.

At any given time the individuals and families in the population reside either in private dwellings, in lodgings,⁴ or in institutions. Private dwellings provide housing for the head of the household and his immediate family, families related to the head, and in addition lodger and servant families. Lodging houses and similar places provide a residence not only for transients in the strict sense, but also for a large group which for some reason is not yet established in private dwellings. Typically this latter group, the more or less temporary residents of lodging houses, includes a large proportion of the young adults who are pursuing their educations or are starting out on their careers as earners, as well as single individuals of all ages.

Secondary families in private households also include a substantial proportion of the younger age groups. To a considerable extent the younger generation live in lodgings or in their

parents' homes for economic reasons. The "American standard of living" has been crystallized around the basic arrangement of a separate dwelling for each separate family unit, defined in the narrowest sense. The pressure for extending the number of private dwellings to satisfy this standard is very real and tends to mold the behavior of the entire population.

Given the means, young people will set up housekeeping in ever increasing numbers as young married couples, as partners, or as single individuals. The same is probably true within limits of the generation of grandparents, which represents another important segment of the secondary families living in private households.

According to the Federal Reserve Board's 1949 Survey of Consumer Finances in early 1949, there were 6.6 million related spending units living in homes of their relatives⁵ and there is probably a comparable number of families and individuals outside the "universe" of private dwellings. Some substantial portion of these groups would like to establish their own "homes" in separate dwellings, and this is especially true of the young people. The number that will actually do so, year by year, will depend on the economic circumstances of these groups.

Income and Asset Holdings Affect Family Savings

At the end of the war the pressure for establishing a "home of one's own" was tremendous. Between 1945 and 1949, upwards of four million new

⁴ Hotels, boarding houses, dormitories, and similar places.

⁵ *Federal Reserve Bulletin*, June, 1949, p. 644.

dwelling units were added to an existing inventory of somewhat over 38 million. Such an increase in the number of private households could have determined the course of aggregate personal saving from 1945 to 1948, especially since these new households were in the main founded by young people, a great number of them veterans of World War II.

Personal saving reversed its downward trend in 1948 and appears to be "leveling off" in 1949. Whether the aggregates will return to prewar relationships between savings and income may well depend on the fortunes of the younger generation.

The very young adults, the newest entrants in the potential family population, may be handicapped by low earnings, lack of assets, and absence of the favorable financing arrangements that assisted their immediate seniors, who were mostly veterans of World War II and their families. When most young people are subjected to the prewar economic limitations in the fulfillment of their desire to set up independent households, their influence on the national totals may well be reduced to its prewar level. The recent Federal Reserve Board surveys of consumer finances indicate that, while the trend is in that direction, the young families and potential families still represent a really tangible element in the pattern of saving and investing.

Age and Income. Characteristically, individual and family incomes rise from the youngest age groups to a peak at some point in the middle ages and then decline in the older age groups. Before the war, in the decade of the 1930's,

the incomes of the youngest age groups were as low as those at the other end of the age scale, or even lower. During and immediately after the war the relative difference in incomes between the young and the middle-aged appears to have been considerably reduced. Recent statistics show that the younger people are still in a relatively favorable position in relation to the other age groups, as judged by the prewar relationships between age and income. According to the 1949 Survey of Consumer Finances, the median incomes of spending units in the various age brackets were as follows:⁶

<i>Age of head of spending unit</i>	<i>Median money income after taxes</i>
18-24.....	\$2,120
25-34.....	3,180
35-44.....	3,480
45-54.....	3,330
55-64.....	2,640
65 and over.....	1,290

Since the age groups have significantly different patterns of spending and saving, a continuation of a more equitable distribution of income as between the young and the middle-aged can lead to a permanent change in the level and distribution of personal savings and the use to which savings are put. Young people save to establish themselves in a trade, business, or profession and to found their families. As the opportunities are presented, they exhaust their liquid asset holdings and mortgage their future earnings for these purposes. If favorable incomes continue for young people newly come into the labor market, the spending and saving of this group may result in a permanent change from the prewar relationships

⁶*Federal Reserve Bulletin*, September, 1949, pp. 1051-2.

between savings and the national income.

In spite of the importance of income by age groups, the current and prospective income situations of a substantial group of young persons are unknown because the survey data exclude, for example, those living in lodging houses and similar places. In addition, they merge the facts about those with little or no income with the information for the relatives with whom they live. If both these groups were included in the statistics on age and income, the income position of the younger age brackets might of course appear less favorable by comparison with the middle years.

Age and the Possession of Assets. The accumulation of War Bonds and other liquid assets in the hands of young people during the war years has been a highly important factor in determining the course of the national totals in recent years. Obviously, the young people have traded their liquid assets for the satisfaction of fundamental wants—homes, furnishings, automobiles, business investments, equipment, and training for their occupations.⁷ Since the age groups under 35 constitute one-third or more of the population, and the age groups under 45, one-half or more, their tendency to convert their liquid assets into homes, automobiles, business equipment, and other similar items probably explains in large measure the course of personal savings totals in recent years.

The amounts of liquid assets held in

⁷ The population not covered in household surveys would affect these proportions substantially.

recent years rise sharply with age to a maximum in the age range 45-64 and then fall, as the following averages show:⁸

<i>Age of head of spending unit</i>	<i>Median amount of liquid assets held in early</i>	
	1949	1947
18-24.....	\$160	\$220
25-34.....	280	400
35-44.....	350	570
45-64.....	690	670
65 and over.....	500	460

At the end of the war the distinction among the age groups was probably less pronounced. At the beginning of 1946, according to the Federal Reserve Board survey, the relative number of spending units with small holdings at given incomes was not substantially lower among the younger than among the older age brackets.⁹

Stocks and bonds other than U. S. government securities appear to be purchased or held largely by the older age groups; the 1948 Survey of Consumer Finances showed the following percentages:¹⁰

<i>Age of head of spending unit</i>	<i>Percentage of units by amount of stocks and bonds held</i>		
	<i>None</i>	<i>Under \$1,000</i>	<i>\$1,000 or more</i>
18-24.....	97	3	0
25-34.....	94	3	2
35-44.....	90	4	5
45-54.....	87	5	7
55-64.....	88	4	6
65 and over...	88	2	9

Fewer of those in the younger groups than in the older groups own homes. In early 1949, according to the Federal Reserve Board's survey, well over half of the nonfarm spending units with

⁸ *Federal Reserve Bulletin*, July, 1947, p. 800; August, 1949, p. 911.

⁹ *Federal Reserve Bulletin*, July, 1946, p. 721.

¹⁰ *Federal Reserve Bulletin*, July, 1948, p. 776.

heads over 45 years owned their homes, whereas among those under 35 years the percentage was about 30.

Age and Current Savings. All available survey data have shown that the percentage of spending units spending more than their incomes in a given year is highest among the younger age brackets and declines over the age scale. The first Survey of Consumer Finances indicated that the young families and individuals were more commonly large savers in 1945, as well as large dissavers for their income level. At that time apparently the young spending units were more numerous in the extremes than in the center of distribution of annual savings or dissavings. During 1946 the opportunities to satisfy their accumulated wants had been apparently sufficient to concentrate the young families among the moderate and small savers of their income groups.¹¹ This position of the younger spending units in the distribution of annual savings seems to have been maintained perhaps up to the present. During 1947 the savings of the age groups in percentage of income, as shown below, indicate clearly the willingness of the younger units to liquidate their assets or to incur debts to satisfy their needs:¹²

Age of head of spending unit	Percentage of income			
	More than 10	0 to 9	1 to 9	10 or more
18-24.....	23	42	16	19
25-34.....	25	31	15	19
35-44.....	36	36	13	15
45-54.....	36	39	10	15
55-64.....	41	37	6	20
65 and over.	27	51	4	18

¹¹ *Federal Reserve Bulletin*, July, 1947, p. 801.

¹² *Federal Reserve Bulletin*, August, 1948, p. 929.

These figures reflect the variations in income distribution, as well as the differences in the use of income by the age groups. They nevertheless emphasize the differences in the contributions of the various age groups to the aggregate savings in a given year. The young families and individuals who have what may be called short-run purposes in saving are quick to convert their assets into the goods and services for which the savings were accumulated. The middle age groups probably have more long-run purposes, the education of their children, for example, and without any doubt place much more emphasis on a contingency reserve against illness, death, unemployment, and disability.

Future Buying Affected by Age Shifts

The purchase of a home is a substantial venture for most families. Yet the desire to do so appears to be so fundamental that the questions about expressed intention to buy in the 1949 survey led to some really astonishing totals for the probable market for homes in the next five years, 1949-1953.¹³ According as the answers are interpreted, 7 to 12 millions of nonfarm homes would be purchased in the next five years, if individuals were able to proceed with their more or less definite plans. By comparison with the existing total of about 20 million owned nonfarm homes, such additions to the total would certainly have a real influence on the course and composition of the national aggregates of personal savings.

Whether these intentions can or will

¹³ *Federal Reserve Bulletin*, September, 1949, p. 1051.

be realized or not, their distribution among the age groups is significant. The young want to buy homes, as the percentages show conclusively:

<i>Age of head of spending unit</i>	<i>Percentage that "will buy or build" or "will prob- ably buy or build" homes, 1949-53</i>
18-24.....	32
25-34.....	37
35-44.....	27
45-54.....	16
55-64.....	10
65 and over.....	4

Clearly the age groups that are now predominantly renters or are living with others or in lodgings form the market for new homes. What is true of homes is to a considerable extent also true of automobiles and other consumer durable goods.

The actual purchases of homes, automobiles, and other durable goods during the past several years underscore the age relationships. Nearly 40 percent of the homes purchased in 1947 and 1948 were bought by veterans of World War II, who still form the substantial proportion of the younger age brackets.¹⁴

The age groups under 35 bought about 45 percent of the automobiles purchased and somewhat under 40 percent of other durables purchased, although they represent only about one-third of all spending units and, as seen above, have less than a proportionate share of current income and liquid asset holdings.

In many ways the savings distributions of the oldest age groups resemble those of the youngest age groups, and this resemblance is without doubt in

part a reflection of a fundamental association between the economic situations of parents and children. Certainly for the age groups 45 and over, the time to carry out the long-range plans comes for many families, and these plans extend from the education of their children and "helping" their sons and daughters get established in homes, trades, businesses, and professions to setting up new living arrangements for their own retirement.

Unfortunately, this normal human cycle of behavior, conditioned by the financial circumstances of those concerned, becomes hidden behind the mechanical framework of statistical tables. It must be seen as the basic and unchanging force underlying the records, or the analyses of statistical series will lose all connections with the reality they purport to describe.

Consumption, saving, and dissaving are not simply determined by this year's income or last year's income. Consumption and savings depend crucially on the distribution of means to satisfy wants among the groups in the population that have very different sets of requirements which determine very different behavior in the market. The particular adjustments that the various age groups make to the economic limitations placed on their activities at a given time can not be assumed to continue when the restrictions on purchasing power are relaxed. Conversely, only through the return of the youngest generation of adults to their prewar status in the distribution of income and resources can a resumption of the prewar relationships between personal

¹⁴ *Federal Reserve Bulletin*, June, 1949, p. 651.

saving and the national income become an actuality in the next few years.

In the longer run, the general aging of our population promises to alter the relationships of national income, expenditures, savings, and investment significantly. Older families with a dual motivation for the accumulation and use of savings may become the central force tending towards change in the structure of interrelationships among economic variables from the present patterns.

Interested in their children and

grandchildren as well as in themselves, families moving towards retirement age, if given the necessary resources, will accumulate the funds needed to satisfy the fundamental purposes of later life. When the time comes, their savings will be transformed into the expenditure patterns that represent their desires to help establish their sons and daughters in adult life and to assure their own independence in old age. The economic analyst looking into the future has the obligation to watch the activities of the grandparents.

Factors in the Business Outlook*

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THE COURSE of business through the spring of 1950 will almost certainly be upward. In this period, a substantial advance seems assured by two favorable factors, which, though temporary, are so important that nothing in prospect on the other side could offset their effects. These are the reversal of inventory policy and the veterans' insurance refunds.

There are, of course, other significant factors affecting the business outlook. Some of these are favorable, some unfavorable. Most important among the former is the rising trend of government expenditures. Among the latter, producers' expenditures for plant and equipment show the greatest weakness. In the aggregate, these other factors may approximately balance each other over the next six months, and they seem more likely to be higher by the end of 1950.

The Inventory Recession

To understand the importance of inventory policy, it is necessary to consider developments since the beginning of the recession in the fall of 1948. At that time, business fears about the prospects for sales and prices gained the upper hand, and worried businessmen decided to "get out from under." All through the postwar period these fears had been accumulating, bolstered by analogies with the deflation following World War I. After three years, many

seemed to feel, "It's just too good to last."

Having thus decided, the reaction was inevitable. The way to "get out from under" is to liquidate inventories, that is, to sell off goods on hand as quickly as possible and restrict purchases to the minimum necessary to carry on business. As Chart 1 shows,

CHART 1
BOOK VALUE OF BUSINESS INVENTORIES, SEASONALLY ADJUSTED



Source: *Survey of Current Business*.

* Address before the Illinois Press Association, at Decatur, Illinois, October 14, 1949.

the downturn in inventories came just after the beginning of 1949.

There was some basis for the pessimistic point of view in the failure of consumer spending to keep pace with rising incomes. The most urgent backlogs of demand accumulated during the war seemed to have been worked off; and for more than a year consumers had been withholding a larger proportion of their incomes from the market place. Savings were up from 2.4 percent of disposable income in the second quarter of 1947 to 7.8 percent in the fourth quarter of 1948. Although the latter is still not quite the normal proportion for savings, it was feared that with consumers hoping for lower prices the trend might continue indefinitely.

The weather, too, played a part. It was the perfect weather sequence that brought us the record crops of 1948, and with these, the temporary curtailment of outlays by farmers whose income was threatened by falling prices. It was the mild fall that held back retail sales in November; and it was the severe storms and cold of the winter that contributed to still other declines in sales and production. These changes made the impact of the trend toward higher savings uneven; and the resulting series of abrupt letdowns seemingly lent confirmation to fears or hopes for lower prices in the period ahead.

The effects on sales were noticeable first at the retail level; and the movement to liquidate inventories began with distributors rather than manufacturers. With the November decline, jittery merchants all over the country concluded, "The buyers' market is

here! Stop buying! Cancel everything possible!" Many of them advertised sales before Christmas, before the full volume of buying was really apparent; and as a consequence many stores were relatively "sold out" by the end of the year.

The drive to liquidate took some time to carry through the stages of distribution and production, so that it took several months to stop accumulating. In that period, there tended to be a shifting of inventories from distributors to manufacturers, and from later to earlier stages of manufacturing.

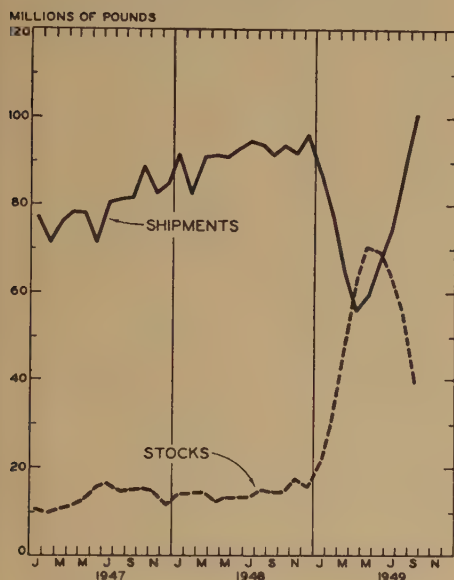
To illustrate, Chart 2 shows changes in manufacturers' shipments and inventories of rayon. In the first four months of 1949, manufacturers tended to maintain production while shipments dropped more than 40 percent; and stocks jumped to over four times their year-end level. In large measure this represented a shift in inventories from consumers to manufacturers rather than a net accumulation; but not until May was production cut back to a point below the level of shipments.

Putting the production cutbacks into effect involved the layoff or discharge of a large number of industrial workers. Almost immediately there was a distinct easing of the labor market; and management abandoned practices designed to ensure an adequate working force in favor of securing greater efficiency of operation by eliminating any unnecessary working staff. This economy drive extended to trade and service industries as well as manufacturing, increasing the total unemployed.

Partly as a result of increased unemployment compensation, personal in-

come stabilized after February, at an annual rate of \$212 billion, only \$5 billion below the December high; and consumer expenditures actually rose a little in the second quarter as savings

CHART 2
RAYON SHIPMENTS AND
INVENTORIES



Source: *Survey of Current Business*.

declined \$1 billion from the peak first quarter rate.

Industrial production continued down, however, until in the second quarter of 1949 it reached a point well under consumption, and then inventories began to move out rapidly. Department of Commerce figures show that in the second quarter nonfarm business inventories were being reduced at an annual rate of \$3.5 billion. The peak annual rate reached by the end of the quarter was of course considerably larger than this quarterly average.

Inventory Changes Still Dominate

The swing in inventory investment was from accumulation at a rate of \$7.1 billion in the fourth quarter of 1948 to liquidation at a rate of \$3.5 billion in the second quarter of 1949, a combined total of \$10.6 billion. Thus, approximately three-fourths of the total decline in the gross national product, which fell from \$270 billion to \$256 billion, was accounted for by the inventory reversal. Since a \$10.6 billion swing in inventory investment would normally produce a much larger decline in the total, the sustaining influence of other factors, particularly increased government expenditures, is reflected in the over-all outcome.

In August and September there was a recovery from the earlier lows. This recovery has sometimes been termed a resumption of inventory buying, and therefore temporary in character. Such an explanation does not take account of what actually happened to inventories in August. Just as it took some months to stop accumulating last winter, it required some months to stop liquidating; and the August data bear out the conclusion that liquidation was still going on.

In August, retailers' stocks increased about \$350 million, about the usual seasonal rise at the start of stocking up for the Christmas rush. Wholesalers' inventories were up about \$200 million, a change also largely seasonal in character. Both of these increases came out of manufacturers' stocks, which declined \$600 million, in contrast to the usual stability during this month. The combined inventories of these three groups declined \$450 million on a sea-

sonally adjusted basis, or at an annual rate of \$5.5 billion. Since prices were relatively stable, this represents an outflow of actual goods at a rate still near the peak of liquidation reached in July. In short, the inventory movement in August had not yet given effect to the cessation of liquidation.

Using Chart 2 to illustrate again, shipments of rayon in September reached a new high, about back to the 1947-48 trend. Almost half of the increase from the spring low, however, represented shipments from inventory; so production was still lagging far behind.

When liquidation ceases, the pace of economic activity will quicken; for liquidation can come to an end only as production is brought up into line with consumption. In other words, the cessation of inventory liquidation is not merely an easing of deflationary pressure, it is a positive force on the upside. In effect, the disappearance of a large disinvestment is equivalent to the appearance of a corresponding investment. The mere cessation of liquidation will therefore bring a \$5.5 billion stimulus from the August level.

The full effect of this change may be delayed for some months, because the rapid flow of goods to consumers will tend to draw off supplies as fast as they are produced. Eventually, however, when recovery has reached the point where liquidation is no longer going on, the movement to liquidate is likely to be regarded as a mistake, and it is probable that the change in inventory policy will not stop at preventing further declines, but will go beyond, to provide some increases where inven-

tories seem deficient in the light of higher flows of income and sales. Although it seems unlikely that accumulation will again reach the high rate of 1948, the reversal of inventory policy stands as a dominant factor in the business outlook.

Veterans' Insurance Refunds

The Veterans' Administration is getting ready to pay, beginning early in 1950, some \$2.8 billion in refunds of insurance premiums. These large excess reserves accumulated because the original premium rates were too high. The casualty rate anticipated was much higher than that actually experienced during the war, and obsolete life tables helped add to the excess over what was needed to meet actual claims.

Most veterans never expected to obtain a refund on these premium payments, so that from their point of view it represents a windfall. For this reason, and because of the relatively small amounts payable to so many people, the refunds are sometimes referred to as "hot money."

These refunds will become a direct tax-free addition to personal incomes. Since personal income is down only \$6 billion from the peak rate of December, 1948, and the annual rate of these payments in the early months of 1950 will in all probability be at least as large, personal income will probably be at a new high when the refund checks are being mailed.

The economic effects of the payments will not result from their initial transfer out of government reserves and into veterans' income but from their disposition by the veterans who

receive them. Some indication of probable spending may be obtained from the size of the individual payments. It appears that some 10 or 11 million veterans, or two-thirds of the 16 million entitled to refunds, will receive checks in sums of less than \$200 each. The other third will receive larger amounts, ranging from \$200 to \$550, with somewhat over half of the total going to this group.

Where the amount received is small, the incentive either to add it to liquid savings or to invest it with the idea of earning additional income is correspondingly reduced. In this large group, the tendency will be to do something the individual wanted to do anyway and hadn't been able to afford up to that point. Such spending might take form in the purchase of additional services of various kinds, perhaps a vacation trip, or it might be embodied in new durable goods, such as television sets or dishwashing machines.

The smaller group getting the larger amounts will have a greater incentive to save or invest these funds, but these larger amounts will also be sufficient to enable them to make payments on large items, such as automobiles or houses. In so far as the refunds are used as down payments, the total effect will of course be multiplied by credit expansion. Practically all lines of business will receive some stimulus from these refund payments.

Allowing on the one hand for substantial withholding in reserves or debt retirement, and on the other for a large expansion of credit on the much smaller portion used as down payments, it may be estimated that the net addi-

tional expenditures will equal the original \$2.8 billion. A small portion of this spending will be made in advance, through anticipatory borrowing; a much larger portion will follow with a reasonable lag; but the peak rate will probably be only a little less than for the payments themselves. Together with the large stimulus to be realized from the cessation of inventory liquidation the expansionary effects of this spending will drive economic activity upward, probably to a new high for the gross national product.

Unfavorable Factors

Brief consideration of the possible offsets to this recovery will help to confirm this basic conclusion. The three factors commonly cited as being significant deflationary forces in the period immediately ahead are strikes, devaluation, and declining business expenditures for plant and equipment. Each will probably be limited in time or in quantity.

Strikes. The strikes in the key coal and steel industries have already interrupted the recovery; and activity will be progressively depressed as they continue. How important their effects will be depends upon the question: How long will they last?

On this point, there is a great deal of confusion and uncertainty. In the steel case, both sides seem to have maneuvered themselves into "no-compromise" positions. It is as much a strike of management against the Administration's handling of the Taft-Hartley Act as of labor against the steel industry. Yet similar situations have

been resolved in relatively short periods through adoption of a compromise formula.

Immediately, certain indicators of business activity have been depressed, and others will be depressed as secondary effects of the strikes are felt. The longer the strikes continue, the more will other industries be affected. Production and employment will be curtailed through lack of fuel and materials. A large segment of the durable goods industries will be shut down. Delays in construction projects and equipment deliveries will curtail capital outlays.

The deflationary effects will, however, be more limited than those of an equivalent production loss in ordinary circumstances, and will be felt only as long as the work stoppage lasts. The income of the workers involved, either directly or indirectly, is reduced during this period, but their consumption is not reduced to the same extent. They usually have some temporary supplements to income and also maintain purchases from current holdings or borrowed funds. The real dissaving which thus occurs during the course of the strike is largely financed by the drawing down of past savings or the reduction of future savings after work is resumed. Considering the entire period, the loss of consumption is nowhere near what might be expected from the loss in income.

At the same time, the strikes will also have inflationary effects. With income and liquid asset holdings at high levels there will be some bidding for supplies which have been restricted by the reduced rates of production. Further-

more, needs accumulate as a result of the production loss. When the strikes affect investment industries, projects are not abandoned but merely deferred for later completion. When they affect consumption industries, inventories are drawn down, and production must be stepped up later to restore working stocks. In either case, backlogs of demands accumulate, ensuring the quick resumption of recovery after a settlement has been reached.

Devaluation. Devaluation of foreign currencies, which has been so general, as to represent almost a revaluation of the dollar, is sometimes thought to have an important deflationary effect. Clearly it is the intent of devaluation to restrict exports from this country by raising their prices in the devaluing countries and to stimulate imports of foreign goods into the United States by giving them a price advantage. Some such effects will undoubtedly be felt, especially by individual firms whose product lines are directly competitive with foreign goods.

It is sometimes even said that the devaluation was an attempt by the British to capture markets here and in other parts of the world for the purpose of "exporting their unemployment." This overlooks the fact that there has been no unemployment of consequence in the United Kingdom, but rather an extreme full employment situation beyond anything experienced in the interwar years. If their total unemployment of a quarter million were added to our August unemployment of 3.7 million, our situation would hardly be significantly changed.

The effects of devaluation on Britain

will be clearly inflationary; and the inflation there will bring its usual complement of economic and political problems. Conditions in this country, on the other hand, will be little affected. Even our trade balance will probably be little changed. Other countries want dollars, for the most part, not just to have dollars, but to use for purchases of goods in this country. Their needs for our goods are practically unlimited; and so there tends to be a direct relation between the dollars available for financing purchases and actual export sales.

During the past year, imports have provided funds to pay for only 60 percent of our exports. Over three-fourths of the remainder has been covered by United States grants and loans. These are the decisive factors in our export balance, because foreign gold and dollar reserves, which had earlier played an important part in financing exports, have in large measure already been exhausted. It is possible that the devaluing countries will try for a time to rebuild their reserves. This is particularly true of Britain, which displays a special concern for reserves because of its controlling position in the sterling bloc. However, coming at a time when our foreign aid programs, including military assistance, will be at a peak, such a temporary movement into reserves should merely moderate the stimulating effects of foreign aid on our economy, and not entail any marked depressing effect.

In all probability, our imports will rise from the recent lows, more as a result of developments here than of devaluation. Imports were cut sharply

in the recession, probably even more than domestic production, as one aspect of the drive to restrict inventories. With the ending of the recession, imports would again have resumed the postwar uptrend. The devaluation may contribute to a temporary bulge, as many importers had been holding off in anticipation of lower prices and now will request acceleration of deliveries. Over a longer period, the devaluation may add a little to the rising volume of imports, but only a little.

All things considered, our exports seem likely to be well maintained. Exports of agricultural products have been largely financed under American aid programs; and while declines in such exports were probable in any case, the devaluation is not likely to produce sharp acceleration of the downtrend. For many other products, the situation will continue to be one in which foreign purchasers have no alternative to buying in this country. They had already restricted imports, often, for many types of equipment and durable goods, to the vanishing point; and if the devaluation brings a substantial easing of exchange controls, foreign purchases of such goods could increase despite sharply higher prices.

Quantitatively, any adverse effects of the devaluation will almost certainly be small. If a change of one percent or so in the gross national product were induced, it would be swallowed up in the wider economic swings we ordinarily experience. In this situation, other factors, including our foreign aid program, are so much more important, that our expectations for business need

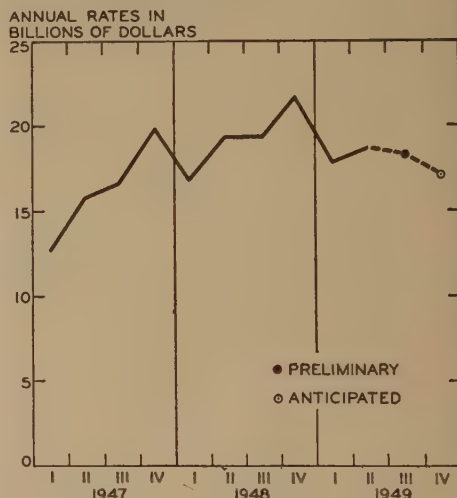
be little modified as a result of this action.

Capital Outlays. Business expenditures for plant and equipment have been declining from the highs of 1948, and it is feared that this decline will continue into 1950, perhaps even beyond, with continual depressing effects. This fear seems confirmed by the business estimates of anticipated capital expenditures, compiled through a joint survey of the Securities and Exchange Commission and the Department of Commerce. These are portrayed on Chart 3 and show an acceleration of the downward movement in the last quarter, to a point 21 percent below the all-time peak in the fourth quarter of 1948.

However, there is reason to doubt that a decline of the indicated magnitude will materialize, except possibly as a temporary result of the steel and coal strikes. For one thing, the initial estimates have practically always been low. Moreover, in this case the estimates were made by businessmen in July and reflect the extreme pessimism at the bottom of the recession. Now, with business prospects brighter, it is probable that capital outlays will again be undertaken more freely.

In 1948 expenditures for producers' durable equipment constituted a larger share of the national output than in prewar prosperity periods and were thus somewhat high in relation to the general level of economic activity. Assuming that this excess was a result of wartime backlogs and could not continue indefinitely, the decline to a more normal relationship was bound to occur, if not as a result of the first sizable

CHART 3
NEW PLANT AND EQUIPMENT
EXPENDITURES, ANNUAL
RATE



Source: *Survey of Current Business.*

recession, then as an initiating factor on its own account. On that basis, a loss of perhaps 15 percent in such investment seemed likely. By the second quarter of 1949 only half of that decline had taken place; and analysis of past relationships therefore supports the expectation of a further decline through the remainder of the year. Once the normal relationship is re-established, however, the analytical approach strongly suggests that at this point in the business cycle, the decline would not continue unless general activity also was declining.

In the situation that seems probable in the spring of 1950, the economy will be moving up rather than down; and the downward trend in capital expenditures will in all probability be arrested. When the general economy moves up

business does not remain passive. The whole history of American development indicates that when businessmen see opportunities they undertake the expansion needed to take advantage of them. Hence, even a new upturn could reasonably be anticipated.

Looking Beyond the Near-Term Recovery

It seems hardly necessary at this point to discuss still other factors feared as significant points of weakness. Some of these, like the readjustment in auto buying or the levelling off of the construction boom, are so indefinite in timing as merely to present questions for future consideration rather than any specific indications of business trends in the near future. What is clear is that the stimulus of the temporary factors discussed at the outset is so much more important than any offsets on the unfavorable side that the course of business can hardly be anything but up for the next six or nine months.

In fact, the magnitude of these two factors is so large as to raise two questions: Will inflationary pressures again dominate the economy? And second, will a serious letdown occur after the near-term recovery is spent?

As to the first, the evidence is hardly conclusive. Some prices have already firmed upward a little and others may be expected to rise as demand quickens. In some industries where there was a dearth of buying last spring, the recent rush of orders has been so large as to reestablish the sellers' market. On the other hand, competitive forces have not yet become fully effective throughout the economy; and continuing improve-

ments in production and distribution will tend to relieve pressure on prices where costs are still rising.

In contrast to the earlier postwar situation, there are now fewer limitations on industry's ability to expand production in response to increased demand. The flow of basic materials is generally adequate, and in most industries capacity is sufficient to ensure deliveries in line with current rates of consumption. There are some tight spots in this picture, but these are now largely in price-administered industries where shortages are not so likely to produce price advances.

The labor force also displays the margins needed to support the recovery, and it is growing constantly. Unemployment was one and a half to two million greater this summer than in 1948; and a mere count of the unemployed does not reveal anything like the full slack in the labor force. Moreover, employment will not rise coordinately with production, because increasing productivity is constantly reducing the man-hours needed to turn out each unit of product. As a consequence, even if gross national production rises again to the record peak of \$270 billion, there is unlikely to be a corresponding tightness in our labor markets. The "wage-price spiral" has no place in even an optimistic view of the outlook.

Turning now to the final question, how much of a letdown there might be in the latter part of 1950 depends upon elements of timing in the behavior of the more permanent factors in the economic picture at that time. If construction continues strong, if pro-

ducers' equipment expenditures again turn up, or if military expenditures are sharply accelerated, then only a limited decline will occur and a situation of relative stability may be achieved in the latter part of the year.

Here, again, an understanding of prospective inventory changes is important. As a force for recovery, the cessation of inventory liquidation is a temporary factor. But it is not a reversible factor, in the same sense as inventory accumulation, which usually ends after a limited period, producing a corresponding letdown. The gain once made will hold, unless new weaknesses bring on a new wave of liquidation. Hence, this part of the recovery may be regarded as permanent in nature. Completion of the inventory reversal may actually be retarded somewhat by the rapid flow of goods to consumers in the spring months; and if so its buoying force will be felt later.

A similar stabilizing influence would be felt if business expenditures for plant and equipment—as a result of the relatively long lag of activity behind commitments—began moving up about the time that the special stimulus of the veterans' refunds was disappearing.

Construction of types not included in these business accounts also shows signs of being a sustaining force for some time. An outstanding development in the construction field in recent months has been the contra-seasonal advance in private home building. The number of new nonfarm dwelling units on which construction started reversed the usual seasonal decline in August and rose again in September to a new 1949

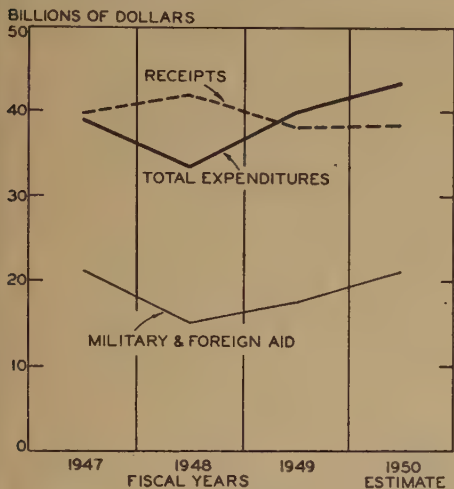
peak of 100,000. This not only holds the prospect that home building activity will be higher in the fall months than in any previous year, but fits in with the findings of the Federal Reserve Survey of Consumer Finances, which indicates that a large backlog of demand for new homes exists and probably will persist through the next five years.

Of greater importance than any of these, however, is the rising trend of government expenditures. State and local, as well as Federal government, programs have been rising sharply and may be expected to continue upward for another year at least. Deficits will be incurred to finance these programs, and the deficit of the Federal government alone in the fiscal year ending next June 30 has been estimated at \$5.5 billion. Chart 4 shows the widening of the deficit as expenditures move up with receipts stable.

Most important of the government programs is the military program, which is responsible for most of the increase in expenditures. Announcement of the Russian atomic bomb explosion apparently reduced opposition to high military expenditures; and Congress quickly passed appropriations of \$17 billion to provide a maximum air force and full assistance to the countries of Western Europe. With these appropriations, the level of military expenditures will be limited by what it is feasible for the armed forces to accomplish, rather than by lack of resources.

The outlook for international affairs is one of continuing tension. Throughout 1950 there are likely to be new

CHART 4
POSTWAR FEDERAL BUDGET
RECEIPTS AND EXPENDITURES



Sources: *Treasury Bulletin*; 1950 estimate from President's budget forecast of November 1.

developments in the world's trouble spots. Among these may be mentioned the struggle for control of Yugoslavia, attempts to consolidate Germany in the Eastern and Western orbits, and the continued fighting in China, which

seems likely to narrow the control of the Nationalist government further but not to eliminate it entirely. New tensions may also develop in other areas, possibly even in some areas which now seem outside the direct sphere of conflict.

With the continued stimulus of tension in various parts of the world, our preparedness program seems likely to be increased, if anything, rather than curtailed; and its effects on business will depend on how sharply it is accelerated. Although outbreak of war on a large scale seems quite unlikely, the characteristic effects of large military expenditures on the economy will undoubtedly be experienced.

The year 1950 as a whole promises to be another highly prosperous one. Beyond 1950, the economic future depends largely on developments in the international field, and no one could reasonably be expected to foretell the course of events. Suffice it to say that, as far into the future as we can see with clarity, there is no threat of a serious depression in business.

Books Reviewed

Unions and Capitalism. By Charles E. Lindblom (New Haven, Conn.: Yale University Press, pp. xi, 267. \$3.75)

The thesis of this book is that "unionism and the private enterprise economy are incompatible; that once unions become strong, the attempt to maintain our economy as it now stands produces unemployment or inflation." Is this revolutionary or reactionary? It is both. But to label it either one or the other does not help us understand or appraise the author's conclusions. These words, "revolutionary" and "reactionary," are clichés that hide rather than reveal truth. The author tries to put these terms aside while he analyzes the significance of powerful and established unions as a force profoundly influential in determining the course of the American economy.

Briefly, his analysis runs as follows: American unions are beginning to develop the strength to dominate the setting of wage levels in a number of industries. It is almost inevitable that this power will be used to force wages to a monopoly level, i.e., above an economically reasonable competitive level, despite the counter pressures of individual employers, competitive forces between firms and between industries, the preferences of individual workers, government controls, and international competition. Since, despite imperfections, the system of capitalism operates on the basis of the competitive adjustment of prices to the demands of consumers and competitively assigned values to the factors of production, a union-monopoly interference with these

preferences is a fundamental violation of the basis of the system and hence the two are "incompatible." The effects of such union-monopoly controls developed within capitalism will be either inflation or unemployment, or both.

Although the author concentrates on this analysis rather than on "solutions" of the dilemma he poses, he does add that he considers we cannot turn back the clock by the effort to break up unions, or to depend on the leadership of businessmen who tend to think and act in terms of past patterns. Possibly, he adds, working through the government, the union movement will come to recognize the dilemma it poses to the system to which it is avowedly (if not by implication) committed and will modify its objectives, policies, and organizational aims to work out a "solution."

How accurate is this analysis? Certainly there are wider and more fundamental implications of a powerful union movement than many have admitted who have considered only the fragmentary effects of its earlier struggles. The American economy is approaching the time when the basic judgments on how to adjust wage levels to market forces, alternative economic and social values, and the needs of the whole economy are being made with the participation of labor, not by management alone. Certainly, also, those who hope that the union movement can be prevented from achieving such power reckon without the powerful worker motivations of security and economic advance.

The author's analysis is therefore

profoundly challenging and not to be pigeonholed by the clichés of the past. But it is inadequate. In the first place he has enormously oversimplified his description of the present American economy. In many ways, it is already a "mixed" economy rather than the "pure" competitive capitalism of his basic analysis. If there is a threat of "labor monopoly" there are already extensive monopolistic practices in many other fields of manufacturing, mining, trade, agriculture, and international trade. The forces pressing in these directions are as powerful as those within labor. Many of these forces are interacting, just as the growth of powerful unions is largely the result of the growth of powerful corporations and combinations of employers.

In the second place, his assumption of the weakness of employers in the bargaining process of the future appears unwarranted. It is more reasonable to assume that, even in dealing with powerful centralized unions, the fundamental economic roles of risk-taking and management assume at least an equal bargaining position to employers.

In the third place, the author fails to explore adequately the adaptability of the changing economic and political institutions. His final hint, or "hope," needs a great deal more analysis. Our own wartime history and the policies developed by the labor movements of such countries as England and Sweden suggest that, by both economic and political action, unions can be expected to face and be responsive to the implications of their actions.

Thus, the author has gotten beyond

pat formulas and challenged our thinking. But he does not make the more fundamental analysis of the dynamic relation between powerful unionism and controlled capitalism. The real question is whether the future power of unions will be used in such a way as to be compatible with the "capitalism" of the future—not of the idealized past.

W. ELLISON CHALMERS

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Effective Business English. By Alta Gwinn Saunders, with Francis W. Weeks and Hugh W. Sargent (New York: The Macmillan Company, 1949, pp. xi, 871. \$4.50)

Effective Business English has been a widely used book in the field of business letter writing since 1925. This third edition, while following the same general plan, is a completely rewritten book brought completely up to date with new material and illustrations. And praise be, this book is set in a very readable 10-point type on a 12-point slug so that even we old men with bifocals can read it with ease.

The book, in a completely new format, is much larger than the older editions. An extra chapter is given to credits and collections. A chapter has been added on goodwill letters. A second chapter has been added on applications. Concerned with self-appraisal, job analysis, and career choosing, it will be welcomed by all teachers. There is an excellent new chapter on reports.

The chapter on mechanics, plus the handbook of usage in the appendix, is

not only adapted to the college student but makes an excellent desk manual for the office. The section on the legal aspects of business correspondence is the most concise and usable that we have seen. Exercises for use in class, as well as letter problems for home work, make this a well-rounded, teachable text.

Specific business principles and practices are illustrated with a wealth of actual letters from varied companies. Most of the letters are chosen because they have accomplished the objective for which they were written. Although no letter will fit exactly into another business situation, it can often serve as a guide. Most of the illustrations are either reproduced from plates or set in typewriter type to add reality.

Effective Business English not only emphasizes "the importance of the mastery of business letters and of written expression in the vital technique of human relationships," but it constantly considers letters as a part of the public relations program of a firm and of the larger subject of social science. Written at the college level, this book can be recommended highly for either the college classroom or the business office.

C. R. ANDERSON

Wartime Industrial Statistics, by David Novick and George A. Steiner (Urbana: University of Illinois Press, 1949, pp. vi, 221. Cloth, \$3.00; paper, \$2.00)

This volume is a welcome addition to the small but growing list of books dealing with wartime economic control problems. *Wartime Industrial Statistics*,

written by two former War Production Board officials, tells the story of the way in which the War Production Board and its predecessor agencies collected and used facts about American industry to manage our successful mobilization effort in World War II. The book analyzes the problems of collecting and using industrial data to control war production in the years 1940-1945 and, on the basis of that experience, makes timely and specific suggestions for improving the methods and techniques of an emergency statistical system, to be used in the event the nation should again be confronted with the actual problem of industrial mobilization for war.

The authors leave no doubt in the reader's mind of the strategic role played by an industrial statistical system in emergency mobilization. "Intelligent wartime industrial control," they observe, "is impossible without adequate methods for collecting and using facts. . . . Facts and factual collection methods are managerial tools without which intelligent choices among alternative courses of action cannot be made." (p. 1)

Since successful mobilization rests so heavily on a factual base, one would have supposed that in the interwar years adequate preparedness measures were taken. But they were not. The nation as a result paid a very high price before an industrial reporting discipline was established to meet even the most urgent policy and administrative needs of World War II mobilization.

But how can we be prepared? Drawing on the experience of World War II and guided by the probable exigencies

of future mobilization needs, the authors set forth the detailed framework of a comprehensive long-range program for the development of an adequate emergency reporting system. Their presentation includes the broad character of a satisfactory reporting system, the detailed methods and techniques which should be incorporated in it, the best methods for integrating the details into a balanced over-all statistical system, and the procedures by which the reporting system can be of most use both in formulating control policy and in the administration of that policy.

They recommend that the system be kept adaptable by assigning responsibility for its continuing development to the National Security Resources Board, which should work continuously with industrial and governmental organizations engaged in the collection and processing of reports.

The authors reveal understanding of emergency industrial management problems; and the analysis is geared to establishing methods by which management problems can more intelligently be solved by the use of facts. It is recognized that the statistical methodology needed to support wartime management cannot be completely blueprinted today, or created overnight. Despite the whetstone grinding of five long war

years many statistical tools were not sharp. Perfecting better tools will require much time and much research. A number of fundamental research projects for insuring better statistical preparedness are therefore outlined.

The detailed recommendations are built upon the analysis of outstanding problems met and solved (some were not really solved) in World War II. Included in the analysis are such problems as: the struggle to evolve a comprehensive reporting system, controlling the issuance of questionnaires, the development of technical standards and procedures in the reporting system, unifying and clarifying units of measure and nomenclature, respondent coverage, the impact of data demands on industry, tabulating data, and controlling administrative action by accounting methods.

The study is a highly condensed statement of a vast experience. In spots it is rather technical. But clarity of presentation, together with a balanced mixture of well-chosen illustrations and valid generalizations, makes the book understandable to the nontechnician. Anyone who is interested in the application of statistical methods to governmental industrial management will find here a wealth of information.

ROBERT W. MAYER



BUREAU OF ECONOMIC AND BUSINESS RESEARCH

The Bureau of Economic and Business Research, established in 1921, is the research department of the College of Commerce and Business Administration. Economic and business information, including material on tested business practices, is compiled by the Bureau and made available to Illinois businessmen and others interested in business and related problems. Although the major part of its work deals especially with Illinois, the Bureau also engages in general economic research.

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Bulletin 68, *Qualitative Analysis of Radio Listening in Two Central Illinois Counties*, by Charles H. Sandage.

Business Study 5, *Store Hours for Shopping Goods Retailers*, by David J. Luck.

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